| The territory and the second | 1/203            |
|------------------------------|------------------|
| Access                       | Locus Gene       |
| AB023957                     | 170773 AB023957  |
| AB030906                     | 29871 Scmh1      |
| AB035322                     | 108897           |
| AB036708                     | 170828 Vgll1     |
| AB039178                     |                  |
| AB041576                     | 58242 Nudt11     |
| AB041610                     | 97484 Cog8       |
| AB042402                     |                  |
| AB045323                     | 14695 Gnb3       |
| AB047323                     | 52357 D8Ertd594e |
| - · · ·                      |                  |
| AB047820                     | 104416 Bap1      |
| AB047921                     | 67210            |
| AB048834                     | 64435 Fcamr      |
| AB052945                     | 109904 Mcf2      |
| AB055154                     | 108138 Xrcc4     |
| AB055635                     | 26931 Ppp2r5c    |
| AB056100                     | 66902 Mtap       |
| AB071988                     | 26914 H2afy      |
| AC079832                     | 286947 Adh6b     |
| AF030001                     | a lot            |
| AF035526                     | 20534 Slc4a1ap   |
| AF060088                     | 26440 Psma1      |
| AF061933                     |                  |
| AF061934                     | 50779 Rgs6       |
| AF062567                     | 50782 Rgs11      |
|                              | 20687 Sp3        |
| AF071173                     | 15204 Herc2      |
| AF072758                     | 26568 Slc27a3    |
| AF078112                     | 12328 Caml ?     |
| AF083876                     | 13731 Emp2       |
| AF090738                     | 16368 Irs2       |
| AF092877                     | 19823 Rnf7       |
| AF100956                     | a lot            |
| AF104414                     | 16798 Lats1      |
| AF105217                     | 57813 Tk2        |
| AF106621                     | 21,855 Timm17b   |
| AF121976                     | 57250 Ors19      |
| AF127245                     | 20591 Smcx       |
| AF129888                     |                  |
| AF133300                     | 20918 Sui1-rs1   |
| AF150755                     | 259102 Olfr630   |
|                              | 11426 Macf1      |
| AF155583                     | 18089 Nkx2-3     |
| AF158744                     | 67310 Prlpc2     |
| AF162224                     | 30924 Angptl3    |
| AF162781                     | 16332 Inppl1     |
| AF177211                     | 140795 Gpr105    |
| AF190665                     | 56873 Lmbr1      |
| AF193606                     | 20658 Son        |
| AF213381                     | 27406 Abcf3      |
| AF217484                     | 57444 lsg20      |
| AF220205                     | 65116 Prrg2      |
| AF220355                     | 56747 Al843918   |
| AF223953                     |                  |
| AF228925                     | 54208 Arl6ip1    |
| AF232828                     | 72088 Ush1c      |
|                              | 18134 Nova1      |
| AF237628                     | 93677 Lmod2      |
|                              |                  |

Figure 1-1

AF237917 109225 192192 Shkbp1 AF246218 AF254416 64450 Gpr85 . 107272 Psat1 AF259674 AF267660 18604 Pdk2 AF276974 192201 AF276975 192200 Swam2 19386 Ranbp2 AF279458

AF281870 64009 Syne1 AF285577 107815 Scml2 AF285590 73679 Tex19 AF290542 192198 Lrrc4 AF292939 170753 Gig1 AF293079 18360 Olfr6 AF297860 104776 Aldh6a1 AF317552 108062 Cstf2 AF320126 14816 Grm1

AF320615

AF326960 21380 Tbx1
AF327857 232288
AF332051 104112 Acly
AF332067 75425

AF334612 170761 Pdzk2 AF343752 77053 Unc84a AF346413 75526 Spinlw1 68291 Mto1 AF369902 AF375046 93762 Smarca5 AF407579 140859 Nek8 AF408435 233406 Prc1 AF411608 76273 Ndfip2 AF411834 20620 Snk AJ006215 12764 Cmas AJ131821 11938 Atp2a2

AJ250690

AJ276505 79202 Tnfrsf22 ? AJ278733 17884 Myh4 AJ288061 76707 Clasp1

AK002252 68323 AK002276 71668 AK002297 71667 AK002360 64697 Keg1 AK002407 110826 Etfb AK002416 68350

AK002441 66039 D14Ertd449e

AK002458 68339 AK002465 71675 AK002481 74090

AK002490 20195 S100a11

AK002569 73242 AK002574 68348 AK002637 66689 Btbd5 AK002667 67899

AK002696 28126 D13Wsu177e AK002704 68365 Rab14 AK002744 68375 Ndufa8

AK002767 76509

| AK002769   | 71683 Gypc       |
|------------|------------------|
| AK002772   | 66425            |
| AK002842   | 68386            |
| AK003123   | 68433            |
| AK003132   | 75406 Ndufs7     |
| AK003154   | 68420            |
| AK003179   | 66101 D4Wsu43e   |
| AK003201   | 68472            |
| AK003223   | 68563 Dpm3       |
| AK003232   | 109857 Cbr3      |
| AK003256   | 74320            |
| AK003278   | 52466 D11Ertd18e |
| AK003282   | 66496            |
| AK003287   | 66264            |
| AK003337   | 68490            |
| AK003388   | 76291            |
| AK003400   | 68566 Calcyon    |
| AK003413   | 68001            |
| AK003420   | 68567 Cgref1     |
| AK003511   | 73724 Mcee       |
| AK003524   | 71784            |
| AK003542   | 73728            |
| AK003549   | 68499 Mrpl53     |
| AK003556   | 66966 Trit1      |
| AK003584   | 81018 Zfp313     |
| AK003586   | 231712           |
| AK003605   | 74770            |
| AK003609   | 76308            |
| AK003611   | 67070            |
| AK003623   | 74772            |
| AK003642   | 68618            |
| AK003651   | 14000 Etohi2     |
| AK003653   | 68644 Dorz1      |
| AK003656   | . 74775          |
| AK003661   | 68520            |
| AK003676   | 68581            |
| AK003735   | 52840 D2Bwg0891e |
| AK003794   | 97541 Qars       |
| AK003808   | 224250           |
| AK003818   | 66248 Alg5       |
| AK003819   | 74777            |
| AK003826   | 68530            |
| AK003850   | 66151            |
| AK003863   | 26901 Deb1       |
| AK003866 ' | 28295 D10Jhu81e  |
| AK003880   | 68647            |
| AK003996   | 68668            |
| AK004007   | 67855            |
| AK004009   | 54151 Cyhr1      |
| AK004012   | 68708            |
| AK004139   | 68735            |
| AK004323   | 66201            |
| AK004341   | 68845            |
| AK004342   | 66478            |
| AK004431   | 66090            |
| AK004506   | 68942            |
|            |                  |

| AK004550             | 71707           |
|----------------------|-----------------|
| AK004563             |                 |
| AK004586             | 66868           |
| AK004617             | 66861 Dnajc10   |
| AK004627             | 74119           |
| AK004632             | 74105 Gga2      |
| AK004650             | 67451           |
| AK004655             | 74107           |
| AK004657             | 74111           |
|                      | 73830           |
| AK004664             | 73340 Nptxr     |
| AK004679             | •               |
| AK004703             | 71733 Susd2     |
| AK004714             | 74133           |
| AK004723             | 74144 Robo4     |
| AK004757             | 71728           |
| AK004778             | 74122           |
| AK004803             | 66875           |
| AK004813             | 71729 Rgs12     |
| AK004913             | 74158           |
| AK004928             | 56275 Rbm14     |
| AK004939             | 71753 Tmprss6   |
| AK004943             | 66627           |
| AK004975             | 71770 Ap2b1     |
| AK005015             | 246277 Csad     |
| AK005033             | 52432 Ppp2r2d   |
| AK005035             | 71775           |
| AK005044             | 74157           |
| AK005044<br>AK005048 | 223776          |
| AK005046<br>AK005056 | 66897           |
| AK005050<br>AK005063 | 110351 Rap1ga1  |
| AK005069             | 71767           |
| •                    | 69757 Leng1     |
| AK005095             | 68970           |
| AK005099             | 72003 Synpr     |
| AK005132             | 101867          |
| AK005138             |                 |
| AK005139             | 68262 Agpat4    |
| AK005159             | 72017           |
| AK005160             | 72014           |
| AK005164             | 76566           |
| AK005166             | 76500           |
| AK005167             | 76686           |
| AK005205             | 67129           |
| AK005251             | 68975           |
| AK005267             | 68953           |
| AK005311             | 66871 Cpne8     |
| AK005345             | 69029           |
| AK005386             | 72008           |
| AK005431             | 67009           |
| AK005479             | 52076 D4Ertd89e |
| AK005519             | 67701           |
| AK005536             | 67883 Uxs1      |
| AK005558             | 76509           |
| AK005562             | 72205           |
| AK005588             | 69317           |
| AK005619             | 72215           |
| AK005661             | 69082           |
|                      |                 |

AK005710 67283 Slc25a19 AK005730 69318 AK005734 75470 AK005740 74215 AK005756 75454 AK005842 71840 71838 Phf7 AK005852 AK005862 74221 AK005864 75645 AK005887 69354 Slc38a4 AK005888 69324 AK005944 76920 Arrdc5 AK005989 71853 Txndc7 AK006009 75553 AK006014 69428 AK006023 75540 Fpgt AK006079 76405 AK006107 74229 AK006141 75656 AK006145 75642 AK006173 75629 AK006185 70373 AK006222 72251 AK006243 66091 Ndufa3 AK006263 54613 Siat10 AK006273 69441 AK006283 69435 AK006427 69440 75568 AK006467 AK006472 74239 AK006487 75623 AK006490 66938 AK006504 76380 AK006521 99349 AK006525 70375 AK006533 69519 Rwdd2 AK006539 27660 AK006617 73284 Ddit4l AK006739 22217 Usp12 74270 Usp20 AK006800 AK006807 74271 73447 Wdr13 AK006837 AK006889 73410 AK006938 73493 AK006959 74279 AK006993 73486 AK007077 73572 AK007097 14051 Eya4 AK007130 73582 AK007327 66144 Atp6v1f AK007339 99730 Taf13 AK007351 69038

69062

69082

107686 Snrpd2

69046 Hbld2

AK007368

AK007389 AK007415

AK007452

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Figure 1-5

69053 AK007485 69064 AK007494 AK007519 69090 Ascc1 110052 Dek AK007546 AK007552 56036 Ccnl2 AK007598 69162

AK007653 52443 D4Ertd786e

AK007678 69185

27410 Abca3 AK007703 AK007777 83490 Pik3ap1 107747 Fthfd AK007822

AK007831 68115 70061 AK007857 AK007913 69833 AK007933 72282 AK007941 67509 67490 AK007993 72042 Cotl1 AK007994 AK007999 69815 AK008008 69824 AK008045 76952 Nt5c2

76769 AK008071 76526 AK008080 72041 AK008083 75599 AK008111 228880 AK008125 AK008151 70114 AK008163 76523

AK008201 69875 Ndufa11

70257 AK008333 AK008338 69894 67495 AK008415 72098 AK008493 67035 AK008537 67939 AK008574

AK008703 75669 Pik3r4

AK008724 70123

72349 Dusp3 AK008734

AK008736 70153 AK008749 66132 AK008753 70387

AK008761 74257 Fbxo23

74245 AK008791 70082 AK008800

AK008803 72281 Sh2d4a

75685 AK008900 70285 AK008988 107358 AK008994 AK009014 69541

AK009074 107734 Mrpl30

AK009114 71885 AK009123 69487

AK009134 75572 Acyp2

AK009163 76730 67484 AK009180 69482 AK009187

WO 2005/007892 PCT/US2004/021543 7/203

AK009205 AK009213 75573 AK009243 69534 Avpi1 AK009267 28019 lng4 AK009308 246257 AK009325 79043 Tce1 71907 Serpina9 AK009343 ١. 76948 AK009344 AK009362 99650 76437 D11Bwg0414e AK009365 52685 D11Ertd736e AK009375 74252 Arcp AK009402 AK009436 67345 AK009447 66700 Vps24 AK009450 71904 268721 AK009454 66053 Ppil2 AK009460 67863 Slc25a11 AK009487 AK009497 69568 Vkorc111 AK009584 69639 Exosc8 AK009653 68544 AK009669 72309 66958 AK009759 AK009856 77039 AK009886 71923 AK009912 76467 Mrsb AK009937 71941 AK009957 69692 69697 AK009960 AK010038 269587 Epb4.1 70281 AK010113 73373 AK010147 AK010152 66556 Drap1 AK010202 66968 AK010234 50724 AK010262 71955 AK010301 71973 AK010310 67755 Ddx47 AK010312 76483 243983 AK010382 69748 AK010387 71986 Ddx28 AK010396

AK010425 71957

69219 Ddah1 AK010430 AK010433 66609 Cryzl1

AK010448 71968

52666 D10Ertd610e AK010452

AK010453 69719 Cad AK010466 76484 AK010476 71979 AK010511 11652 Akt2 66984 AK010552 69746 AK010555 72425 AK010654 AK010752 73694 AK010786 73710

AK010874 69834 AK010890 72308 Brf1 AK010898 72320 AK010939 68196 Hsbp1 AK011034 19139 Prps1 AK011126 268490 AK011127 67031 Upf3a AK011160 72117 Mak3p AK011184 67039 AK011196 67042 AK011230 72136 AK011231 72068 Cnot2 AK011290 67763 AK011354 67041 Öxct AK011396 234729 D8Wsu151e AK011446 70348 AK011457 75409 Slitrk5 AK011531 67788 AK011541 71810 AK011544 66254 AK011557 69903 AK011565 69904 AK011747 17237 Mgrn1 AK011781 72482 Acbd6 AK011810 68263 Pdhb AK011832 72465 Zfp131 AK011862 28018 D7Wsu128e AK011881 67148 AK011950 67157 AK011978 269003 AK012054 72519 AK012087 70028 AK012097 72155 AK012109 72194 AK012134 72195 AK012159 72542 AK012212 107581 Col16a1 AK012224 76795 AK012240 66399 AK012283 72569 AK012292 72561 AK012304 72612 AK012326 52323 D5Ertd363e AK012392 76816 Sdccag8 AK012475 330203 AK012503 72563 AK012535 101513 Al256456 AK012553 77015 AK012601 67622 AK012610 72654 AK012624 72621 AK012635 69920 Polr2i AK012711 69226 Snx24 AK012733 76366 AK012765 69938 Scrn1 AK012842 72686

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72674
AK012847
                         72701
AK012848
AK012885
                         67212 Mrpl55
                         72681
AK012922
AK012969
                         74200
                         74201
AK012971
                         67610
AK013003
                         72184
AK013012
                         20621 Snn
AK013035
AK013044
                        106200
                         67059
AK013055
                         75620
AK013135
                         72174
AK013145
                         67607
AK013166
AK013175
                         28027 D4Wsu132e
                         20467 Sin3b
AK013202
AK013245
                         72748
                         72747
AK013267
                         72759
AK013269
AK013280
                         67229
                        170707 Usp31
AK013309
                         72792
 AK013367
                         72843 Prdm4
 AK013393
                         109785 Pgm3
 AK013402
                         104884
 AK013427
                         67515
 AK013464
                         72900 Ndufv2
 AK013511
                         72871
 AK013595
                         72880
 AK013604
                          72881 Zdhhc4
 AK013609
                          72894
 AK013632
                          14397 Gabra4
 AK013727
                          73053
 AK013800
                          73090
 AK013837
                          23938 Map2k5
 AK013856
                          72397
 AK013872
                          70223 Nars
 AK013880
 AK013924
                          12301 Cacybp
 AK013927
                          73099
 AK013948
                          69269 Scnm1
 AK013995
                          73078
                          73068 Fut11
 AK014029
                          73172
  AK014134
                          67287
  AK014142
                          56738 Mocs1
  AK014178
                         216877 Dhx33
  AK014230
                          73192 Xpot
  AK014235
                          76965
  AK014285
  AK014338
                          74840 Armet
                          74315
  AK014408
                         257635 Sdsl
  AK014487
                           74347
  AK014579
                           70807 Arrdc2
  AK014582
                           66701
  AK014623
                           74617
  AK014680
  AK014709
                           74585 4833416l09Rik
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Figure 1-9

| AK014752                  | 75768            |
|---------------------------|------------------|
| AK014763                  | 75769            |
| AK014772                  | 74592            |
| AK014834                  | 75778            |
| AK014863                  | 70853            |
| AK014891                  | . 14479 Usp15    |
| AK014942                  | 76856            |
| AK014948                  | 66719            |
| AK014993                  | 70961            |
| AK015007                  | 77048            |
| AK015063                  | 75773            |
| AK015086                  | 73809            |
| AK015106                  | 106039 Gga1      |
| AK015275                  | 73945 D8Ertd69e  |
| AK015309                  | 75792            |
| AK015402                  | 74862            |
| AK015452                  | 75796 Cdyl2      |
| AK015555                  | 74919            |
| AK015642                  | 75036            |
| AK015650                  | 67509            |
| AK015766                  | 75083            |
| AK015803                  | 225980           |
| AK015818                  | 75075            |
| AK015898                  | 75141 Rasd2      |
| AK015916                  | 73866            |
| AK015921                  | 75209 Sv2c       |
| AK015947                  | 68195 Rnaset2    |
| AK015971                  | 75829            |
| AK015972                  | 75137            |
| AK015988                  | 75146            |
| AK016000                  | 56428 Mtch2      |
| AK016018                  | 75163            |
| AK016037                  | 75212 Rnf121     |
| AK016128                  | 75359            |
| AK016162                  |                  |
| AK016214                  | 75275            |
| AK016247                  | 18640 Pfkfb2     |
| AK016267                  | 65103 Arl6ip6    |
| AK016282                  | 75863            |
| AK016299                  | 75894            |
| AK016352                  | 66722            |
| AK016374                  | 75879            |
| AK016385                  | 52348 D8Ertd531e |
| AK016397                  | 66362            |
| AK016466                  | 70965            |
| AK016475                  | 70981            |
| AK016480                  |                  |
| AK016509                  | 71003            |
| AK016517                  | 75725            |
| AK016520                  | 71745 Cul2       |
| AK016542                  | 74386            |
| AK016563                  | 51885 D2Ertd4356 |
| AK016572                  | 74411            |
| AK016584                  | 72230            |
| AK016622                  | 74438            |
| AK016671                  | 74412 Gle1I      |
| · · · · · · · · · · · · · |                  |

74443 AK016685 AK016704 74434 AK016786 71804 AK016812 74085 AK016865 71164 Zdhhc20 AK016873 71192 AK016890 71099 AK016916 109242 Kif24 AK016990 74481 AK017020 71241 Dmrtc2 AK017044 71304 AK017081 74480 Samd4 AK017095 71240 Osbpl7 AK017138 74471 AK017149 75964 AK017158 75965 AK017214 71323 AK017226 75734 AK017249 11842 Arf3 AK017256 71326 Treml1 AK017270 237943 AK017282 71373 AK017309 71382 Pex1 AK017464 75747 Sesn3 AK017484 67023 AK017491 70478 Mipep AK017528 69227 AK017530 70502 AK017531 73998 Herc3 AK017550 59032 AK017577 74741 AK017628 70556 AK017676 70594 AK017726 70625 Crsp7 AK017736 70616 Sf4 AK017750 70623 AK017761 70619 AK017769 70614 AK017801 68021 AK017808 70652 AK017848 74329 AK017929 76007 Zfp198 AK018027 277250 AK018060 76131 AK018089 76137 AK018115 74007 Btbd11 AK018132 74008 AK018155 70750 AK018159 18549 Pcsk2 AK018222 76161 AK018327 76206 AK018331 76205 Stard3nl AK018362 71468 Obox1 AK018495 74536 AK018541 71564 AK018551 107022

| AK018560             | 67556 Pigm       |
|----------------------|------------------|
| AK018561             | 71546            |
| AK018585             | 74558            |
| AK018594             | 68145            |
| AK018599             | 22353 Vip        |
| AK018615             | 71597            |
| AK018680             | 66251 Arfgap3    |
| AK018731             | 68193 Rpl24      |
| AK018937             | . 78636          |
| AK018953             | 68214            |
| AK019059             | 59040 Arht1      |
| AK019039<br>AK019147 | 19084 Prkar1a    |
| AK019147<br>AK019168 |                  |
| AK019176             | 68991            |
| AK019176<br>AK019216 | 93687 Csnk1a1    |
|                      | 78832            |
| AK019434             | 28040 D6Wsu163e  |
| AK019462             | 20643 Snrpe      |
| AK019479             | 2222             |
| AK019481             | 68260            |
| AK019514             | 78104            |
| AK019527             | 78903 Wrnip1     |
| AK019531             | 78902            |
| AK019538             | 78092            |
| AK019547             |                  |
| AK019590             | 78154            |
| AK019600             | 78795            |
| AK019605             | 78799            |
| AK019621             | 78796            |
| AK019664             | 78801            |
| AK019665             | 78174            |
| AK019744             | 78931            |
| AK019803             | 78217            |
| AK019863             | 77634            |
| AK019886             | 68151            |
| AK019929             | 78283            |
| AK019938             | <b>321015</b>    |
| AK019948             | <b>78095</b>     |
| AK019985             | 77521            |
| AK020024             | 106504 Stk38     |
| AK020090             | 68176            |
| AK020099             | 68180            |
| AK020225             | 77506            |
| AK020284             | 77669            |
| AK020352             | 78242            |
| AK020377             | 67791            |
| AK020410             | 52120 D8Ertd354e |
| AK020441             | 77272            |
| AK020471             | 12631 Cfl1       |
| AK020492             | 77305            |
| AK020608             | 78425            |
| AK020613             | 78672            |
| AK020653             | 78558            |
| AK020687             | 78083            |
| AK020700             | 77763            |
| AK020702             | 78428            |
| AK02070Z             | 77570 0-10       |

AK020724

77578 Bcl9

77754 AK020727 77929 AK020780 77794 AK020831 AK020837 77799 Sla2 68146 AK020859 AK020868 68073 110920 Stch AK021006 AK021023 78688 Nol3 AK021033 77219 77318 AK021066 77462 AK021099 77643 AK021152 AK021166 77609 77644 AK021190 13057 Cyba AK021200 AK021301 78578 77996 AK021330 AK021336 77994 AK021396 78550 235402 Lrm6a AK027262 70603 Mutyh AY007717 192655 Cacna1i AY026384 100273 Osbpl9 BC002157 BC002178 93747 Echs1 108902 BC002191 110279 Bcr BC002193 211556 BC002199 BC002199 217827 BC002230 BC002230 BC002240 66310 BC002274 69216 BC002298 19283 Ptprz1 BC002302 106583 Rbm16 BC002306 245841 Polr2h 27878 D1Ertd251e BC002307 71665 Fuca BC003235 98985 Al462438 BC003237 BC003247 229725 Mclc 228355 Madd BC003255 73828 Wdr21 BC003284 BC003288 28088 D10Wsu52e 106344 Rfc4 BC003335 BC003451 232087 Mat2a BC003457 108645 BC003842 97112 C87860 BC003847 77125 58875 BC003914 BC003922 52615 D11Ertd530e BC003932 67278 286940 Flnb BC003959 30853 Mlf2 BC003975 BC003986 BC004000 170791 Rnpc2 BC004012 192185 BC004012 234959 Crsp6 BC004062 BC004064 20682 Sox9 192287

BC004098

Figure 1-13

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72722

104318 Csnk1d

BC004630 216549 102607 Snx19 BC004635 BC004648 74737 BC004653 67155 BC004680 13052 Cxadr BC004739 · 213211 Rnf26 BC004754 21351 Taldo1 BC004759 171095 Il17rc 233066 Al428936 BC004761 BC004764 56690 Mlycd 71799 Ptcd1 BC004766 BC004768 224742 Abcf1 BC004811 BC004826 57278 Lu BC005459 102866 Pls3 BC005485 99543 Olfml3 BC005494 216157 ORF61 BC005515 100090 Hkr3 BC005517 71704 Arhgef3 BC005518 76867 67976 BC005574 BC005598 98221 Ga17 BC005600 70231 Gorasp2 BC005603 68776 Taf11 BC005625 217038 BC005658 69957 Cdc16 BC005674 142682 AA792890 BC005741 233835 Tnrc6 72144 Slc37a3 BC005744 70465 BC005755 BC005774 BC005788 71994 Cnn3 BC006063 75570 BC006805 72692 BC006905 75608 68939 BC008101 BC009123 72704 BC009141 75062 Sf3a3 BC011091 109815 H47 BC011482 23943 Mbc2 BC012407 110695 Aldh7a1 BC012512 67398 Srpr BC012878 77034 BC013471 77056 BC013555 70650 Zcchc8 BC013716 15499 Hsf1 BC013800 67063 BC014687 68964 BC014769 73166 Tm7sf2 BC015253 11688 Alox15b BC015273 110157 Raf1 BC016073 68916 BC016080 103963 Rpn1

BC004600

BC004604

BC004626

| BC016210               | 67017           |
|------------------------|-----------------|
| BC016258               | 71732 Vps11     |
| BC016444               | 75273           |
|                        |                 |
| BC017130               | 224938 Pja2     |
| BC017138               | 109168          |
| BC017532               | 105501 Abhd4    |
| BC017606               | 72605 Car10     |
|                        |                 |
| BC017615               | 94249 Slc24a3   |
| BC017625               | 68047           |
| BC017627               | 66995           |
| BC017636               | 110796 Sdccag33 |
|                        | •               |
| BC018162               | 73847           |
| BC018329               | 70380           |
| BC018468               | 66753           |
| BC018470               | 23960 Oas1g     |
| D13903                 | 19266 Ptprd     |
| - · <del>-</del> - · - |                 |
| D29797                 | 20908 Stx3      |
| D50366                 | 16579 Kifap3    |
| D86949                 | 18845 Plxna2    |
| J05277                 | 15275 Hk1       |
| L17069                 | 214162 MII      |
|                        | 214 102 11111   |
| L17305                 |                 |
| L20343                 | 12296 Cacnb2    |
| L21027                 | 236539 Phgdh    |
| L32178                 | 232333 Slc6a1   |
|                        |                 |
| L34676                 | 11784 Apba2     |
| L38281                 | 16365 lrg1      |
| M12289                 | 17885 Myh8      |
| M34173                 | 12946 Crry      |
| M36514                 | 22688 Zfp26     |
|                        |                 |
| M36654                 | 15412 Hoxb4     |
| M63245                 | 11655 Alas1     |
| M69293                 | 15902 ldb2      |
| NM_007393              | . 11461 Actb    |
| NM_007399              | 11487 Adam10    |
|                        |                 |
| NM_007404              | 11502 Adam9     |
| NM_007408              | 11520 Adfp      |
| NM_007427              | 11604 Agrp      |
| NM_007429              | 11609 Agtr2     |
| NM_007457              | 11769 Ap1s1     |
|                        | 11771 Ap2a1     |
| NM_007458              | •               |
| NM_007460              | 11776 Ap3d      |
| NM_007462              | 11789 Apc       |
| NM_007471              | 11820 App       |
| NM_007474              | 11833 Aqp8      |
| NM_007495              | 11899 Astn1     |
|                        |                 |
| NM_007498              | 11910 Atf3      |
| NM_007508              | 11964 Atp6v1a1  |
| NM 007524              | 12020 Bapx1     |
| NM_007525              | 12021 Bard1     |
| NM_007527              | 12021 Baid1     |
|                        |                 |
| NM_007529              | 12032 Bcan      |
| NM_007538              | 12057 Opn1sw    |
| NM_007542              | 12111 Bgn       |
| NM_007555              | 12160 Bmp5      |
|                        |                 |
| NM_007557              | 12162 Bmp7      |
|                        |                 |

12217 Bsn NM\_007567 12223 Btc NM\_007568 12262 C1qg NM\_007574 12300 Cacng2 NM\_007583 12317 Calr NM\_007591 12351 Car4 NM\_007607 12366 Casp2 NM\_007610 12387 Catnb NM\_007614 12408 Cbr1 NM\_007620 12418 Cbx4 NM\_007625 NM\_007627 12426 Cckbr 12427 Ccna1 NM\_007628 12447 Ccne1 NM\_007633 12465 Cct5 NM\_007637 12468 Cct7 NM\_007638 12499 Entpd5 NM\_007647 12564 Cdh8 NM\_007667 12616 Cenpb NM\_007682 12630 Cfi . NM\_007686 12632 Cfl2 NM\_007688 12643 Chad NM\_007689 12672 Chrm4 NM\_007699 12677 Chx10 NM\_007701 12683 Cidea NM\_007702 12686 Elóvi3 NM\_007703 12817 Col13a1 NM\_007731 12823 Col19a1 NM\_007733 12843 Col1a2 NM\_007743 12861 Cox6a1 NM\_007748 12909 Crcp NM\_007761 110521 Hivep1 NM\_007772 NM\_007791 13007 Csrp1 13019 Ctf1 NM\_007795 13048 Cutl2 NM\_007804 NM\_007833 13179 Dcn 13197 Gadd45a NM\_007836 NM\_007863 13384 Mpp3 NM\_007871 13430 Dnm2 13476 Dp1 NM\_007874 13544 Dvl3 NM\_007889 13591 Ebf1 NM\_007897 13605 Ect2 NM\_007900 13684 Eif4e NM\_007917 13712 Elk1 NM\_007922 NM\_007930 13803 Enc1 13804 Endog NM\_007931 NM\_007936 13838 Epha4 NM\_007945 13860 Eps8 13870 Ercc1 NM\_007948 13874 Ereg NM\_007950 14028 Evx1 NM\_007966 14084 Faf1 NM\_007983 14133 Fcna NM\_007995 14149 Fdxr NM\_007997 14186 Fgfr4 NM\_008011 14210 Fin15 NM\_008016

| NM_008019   | 14225 Fkbp1a                |
|-------------|-----------------------------|
| NM_008020   | 14227 Fkbp2                 |
| NM_008030   | 14262 Fmo3                  |
| NM_008040   | 14290 Fpr-rs3               |
| NM_Q08060   | 14376 G2an                  |
| NM_008064   | 14387 Gaa                   |
| NM_008066   | 14395 Gabra2                |
| NM_008078   | 14417 Gad2                  |
| NM_008082   | 14417 Gauz<br>14427 Galr1   |
| NM_008083   | 14427 Gail 1<br>14432 Gap43 |
| NM_008085   | 14432 Gap43<br>14447 Gapds  |
| NM_008095   | 14447 Gapus<br>14467 Gbas   |
| NM_008098   | 14489 Mtpn                  |
| NM_008106   | •                           |
| NM_008120   | . 14539 Opn1mw              |
| NM_008121   | 14612 Gja4                  |
| NM_008125   | 14613 Gja5                  |
| NM_008126   | 14619 Gjb2                  |
| NM_008128   | 14620 Gjb3                  |
|             | 14623 Gjb6                  |
| NM_008129   | 14630 Gclm                  |
| NM_008133   | 14661 Glud                  |
| NM_008135   | 14664 Slc6a9                |
| NM_008138   | 14678 Gnai2                 |
| NM_008142   | 14688 Gnb1                  |
| NM_008149   | 14732 Gpam                  |
| NM_008158   | 14761 Gpr27                 |
| NM_008161   | 14778 Gpx3                  |
| NM_008167   | 14804 Grid2                 |
| NM_008171 . | 14812 Grin2b                |
| NM_008172   | 14814 Grin2d                |
| NM_008187   | 14894 Gtl3                  |
| NM_008222   | 15159 Hccs                  |
| NM_008229   | 15182 Hdac2                 |
| NM_008230   | 15186 Hdc                   |
| NM_008235   | 15205 Hes1                  |
| NM_008249   | 15278 Tfb2m                 |
| NM_008254   | 15356 Hmgcl                 |
| NM_008285   | 15465 Hrh1                  |
| NM_008288   | 15483 Hsd11b1               |
| NM_008292   | 15488 Hsd17b4               |
| NM_008298   | 15502 Dnaja1                |
| NM_008300   | 15525 Hspa4                 |
| NM_008317   | 15586 Hyal1                 |
| NM_008323   | 15929 ldh3g                 |
| NM_008325   | 15932 Idua                  |
| NM_008329   | 15951 Ifi16                 |
| NM_008339   | 15985 Cd79b                 |
| NM_008357   | 16168 II15                  |
| NM_008360   | 16173 II18                  |
| NM_008372   | 16197 II7r                  |
| NM_008373   | 16198 II9                   |
| NM_008374   | 16199 II9r                  |
| NM_008376   | 16205 lmap38                |
| NM_008377   | 16206 Lrig1                 |
| NM_008382   | 16326 Inhbe                 |
| NM_008399   | 16407 ltgae                 |
|             | •                           |

16409 Itgam NM\_008401 16415 ltgb2i NM\_008405 16500 Kcnb1 NM\_008420 16502 Kcnc1 NM\_008421 16509 Kcne1 NM 008424 16563 Kif2a NM\_008442 16568 Kif3a NM\_008443 16594 Klc2 NM\_008451 NM\_008453 16599 Klf3 16650 Kpna6 NM\_008468 16772 Lama1 NM\_008480 16801 Arhgef1 NM\_008488 16832 Ldh2 NM 008492 16866 Lhb NM\_008497 16897 Llglh NM 008502 17095 Lyl1 NM\_008535 17117 Amacr NM\_008537 17118 Marcks NM\_008538 17200 Mc2r NM\_008560 17225 Mcpt2 NM\_008571 NM\_008574 17235 Mcsp 17287 Mep1a NM\_008585 17293 Mesp2 NM 008589 17295 Met NM\_008591 17306 Mg29 NM\_008596 17344 Miz1 NM\_008602 17380 Mme NM\_008604 17448 Mdh2 NM\_008617 17768 Mthfd2 NM\_008638 17777 Mttp NM\_008642 17921 Myo7a NM\_008663 17966 Nbr1 NM\_008676 18002 Nedd8 NM\_008683 18099 NIk NM\_008702 18101 Nmbr NM\_008703 18107 Nmt1 NM\_008707 18108 Nmt2 NM\_008708 18148 Npm1 NM\_008722 18163 Catnd2 NM\_008729 18167 Npy2r NM\_008731 18174 Slc11a2 NM\_008732 18183 Nrg3 NM\_008734 18186 Nrp NM\_008737 18188 Nrtn NM\_008738 18205 Ntf3 NM\_008742 18260 Ocln NM\_008756 18417 Cldn11 NM\_008770 18546 Pcp4 NM\_008791 18563 Pcx NM\_008797 18567 Pdcd2 NM\_008799 18596 Pdgfrb NM\_008809 18600 Padi2 NM\_008812 18630 Pet2 NM\_008821 18640 Pfkfb2 NM\_008825 18706 Pik3ca NM\_008839 18709 Pik3r2 NM\_008841

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| •                      |                            |
|------------------------|----------------------------|
| NM_008845              | 18718 Pip5k2a              |
| NM_008847              | 18720 Pip5k1b              |
| NM_008852              | 18742 Pitx3                |
| NM_008855              | 18751 Prkcb                |
| NM_008857              | 18759 Prkcl                |
| NM_008866              | 18777 Lypla1               |
| NM_008877              | 18815 Pig                  |
| NM_008883              | 18846 Plxna3               |
| NM_008885              | 18858 Pmp22.               |
| NM_008889              | 18938 Ppp1r14b             |
| NM_008890              | 18948 Pnmt                 |
| NM_008902              | 19011 Pp11r                |
| NM_008903              | 19012 Ppap2a               |
| NM_008923              | 19085 Prkar1b              |
| NM_008925              | 19089 Prkcsh               |
| NM_008929              | 19107 Dnajc3               |
| NM_008937              | 19130 Prox1                |
| NM_008939              | 19142 Prss12               |
| NM_008946              | 19175 Psmb6                |
| NM_008947              | 19179 Psmc1                |
| NM_008955              | 19202 Psx1                 |
| NM_008956              | · 19205 Ptbp1              |
| NM_008957              | 19206 Ptch                 |
| NM_008958              | 19207 Ptch2                |
| NM_008969              | 19224 Ptgs1                |
| NM_008971              | 19230 Ptk9                 |
| NM_008972              | 19231 Ptma                 |
| NM_008974              | 19244 Ptp4a2               |
| NM_008983              | 19272 Ptprk                |
| NM_008984              | 19274 Ptprm                |
| NM_008995              | 19305 Pex5                 |
| NM_008997              | 19326 Rab11b               |
| NM_008998              | 19329 Rab17                |
| NM_009015              | 19366 Rad54l               |
| NM_009020              | 19374 Rag2                 |
| NM_009030              | 19646 Rbbp4                |
| NM_009035              | 19664 Rbpsuh               |
| NM_009041              | 19684 Rdx<br>19698 Relb    |
| NM_009046              | 19698 Reib<br>19700 Rem    |
| NM_009047              | 19737 Rgs5                 |
| NM_009063<br>NM_009068 | 19766 Ripk1                |
| NM_009069              | 19769 Rit1                 |
| NM_009070              | 19826 Rnps1                |
| NM_009072              | 19878 Rock2                |
| NM_009072              | 19934 Rpl22                |
| NM_009084              | 19981 Rpl37a               |
|                        | 20017 Rpo1-2               |
| NM_009086              | 20068 Rps17                |
| NM_009092<br>NM_009100 | 20129 Rptn                 |
| NM_009128              | 20129 11ptil               |
| NM_009129              | 20254 Scg2                 |
| NM_009131              | 20254 Scg2<br>20256 Scgf   |
| NM_009147              | 20334 Sec23a               |
| NM_009147<br>NM_009148 | 20336 Sec8                 |
| NM_009153              | 20336 Seco<br>20347 Sema3b |
| 141AI_009 199          | 20041 Sellidob             |
|                        |                            |

20363 Sepp1 NM\_009155 20411 Sorbs1 NM\_009166 20418 Shc3 NM\_009167 20425 Shmt1 NM\_009171 20462 Silg41 NM\_009186 20502 Slc16a2 NM\_009197 20598 Smpd2 NM\_009213 20604 Sst NM\_009215 20648 Snta1 NM\_009228 20675 Sox3 NM\_009237 20724 Serpinb5 NM\_009257 20745 Spock1 NM\_009262 20823 Ssb NM\_009278 20842 Stag1 NM\_009282 NM\_009293 20905 Sts 21337 Tacr2 NM\_009314 21366 Slc6a6 NM\_009320 21390 Tbxa2r NM\_009325 21414 Tcf7 NM\_009331 21749 Terf1 NM\_009352 21810 Tgfbi NM\_009369 21823 Th NM\_009377 21892 TII NM\_009390 21930 Tnfaip6 NM\_009398 NM\_009404 21950 Tnfsf9 22018 Tpo NM\_009417 22024 Crisp2 NM\_009420 22029 Traf1 NM\_009421 22035 Tnfsf10 NM\_009425 22044 Trh NM\_009426 NM\_009427 22057 Tob1 22117 Tst NM\_009437 NM\_009440 22127 Tsx 22129 Ttc3 NM\_009441 26362 AxI NM\_009465 22269 Upk2 NM\_009476 22275 Urod NM\_009478 22284 Usp9x NM\_009481 22286 Utf1 NM\_009482 269523 Vcp NM\_009503 22627 Ywhae NM\_009536 22632 Yv1 NM\_009537 22682 Zfp216 NM\_009551 22700 Zfp40 NM\_009555 22704 Zfp46 NM\_009557 22782 Slc30a1 NM\_009579 22792 Zrf2 NM\_009584 11490 Adam15 NM\_009614 11515 Adcy9 NM\_009624 11546 Adprtl2 NM\_009632 NM\_009634 11564 Adsl 11639 Ak4 NM\_009647 NM\_009652 11651 Akt1 11687 Alox15 NM\_009660 11736 Ankfy1 NM\_009671 11773 Ap2m1 NM\_009679

NM\_009680 11774 Ap3b1 NM\_009688 11798 Birc4 NM\_009717 11922 Neurod6 NM\_009727 11980 Atp8a1 NM\_009729 11984 Atp6v0c NM\_009730 11990 Atrn NM\_009738 12038 Bche NM\_009746 12055 Bcl7c NM\_009748 12068 Bet1 NM\_009779 12267 C3ar1 NM\_009781 12288 Cacna1c NM\_009788 12307 Calb1 NM\_009819 12386 Catna2 NM\_009852 12511 Cd6 NM\_009854 12516 Cd7 NM\_009860 12532 Cdc25c NM\_009861 12540 Cdc42 NM\_009864 12550 Cdh1 NM\_009873 12571 Cdk6 12608 Cebpb NM\_009883 NM\_009895 12700 Cish NM\_009920 12794 Cnil . NM\_009964 12955 Cryab NM\_009974 13000 Csnk2a2 NM\_009983 13033 Ctsd NM\_010010 13116 Cyp46a1 NM\_010064 13427 Dncic2 13798 En1 NM\_010133 NM\_010149 13857 Epor NM\_010157 13983 Esr2 NM\_010160 14007 Cugbp2 NM\_010181 14119 Fbn2 NM\_010200 14168 Fgf13 NM\_010234 14281 Fos NM\_010242 14345 Fut4 NM\_010250 14394 Gabra1 NM 010255 14431 Gamt 14468 Gbp1 NM\_010259 NM\_010264 14536 Nr6a1 14571 Gpd2 NM\_010274 NM\_010278 14581 Gfi1 NM\_010282 14593 Ggps1 NM\_010309 14683 Gnas 14697 Gnb5 NM\_010313 14711 Gnmt NM\_010321 14797 Aes NM\_010347 14840 Gsa1 NM\_010352 14873 Gsto1 NM\_010362 NM\_010377 107970 Hist1h1t NM\_010389 15002 H2-Ob NM\_010412 15184 Hdac5 NM\_010431 15251 Hif1a 15399 Hoxa2 NM\_010451 NM\_010471 15444 Hpca NM\_010473 15464 Hrc 15490 Hsd17b7 NM\_010476

NM\_010500 15939 ler5 NM\_010590 16475 Jub NM\_010595 16485 Kcna1 NM\_010599 16499 Kcnab3 NM\_010607 16526 Kcnk2 NM\_010661 268482 Krt1-12 NM\_010710 16870 Lhx2 NM\_010727 16924 Lnx1 NM\_010765 17165 Mapkapk5 NM\_010769 17180 Matn1 NM\_010770 17182 Matn3 NM\_010771 17184 Matr3 NM\_010781 17229 Mcpt6 NM\_010799 17330 Minpp1 NM\_010817 17463 Psmd7 NM\_010826 17540 Mrvi1 NM\_010837 17760 Mtap6 NM\_010841 17771 Mtl5 NM\_010879 17974 Nck2 NM\_010883 17986 Ndph NM\_010891 18000 Sep-02 NM\_010911 18041 Nfs1 NM\_010942 18196 Nsg1 NM\_010946 18203 Ntan1 NM\_010991 18348 Olfr49 NM\_011010 18378 Omp NM\_011012 18389 Opri NM\_011018 18412 Sqstm1 NM\_011025 18429 Oxt NM\_011040 18510 Pax8 NM\_011042 18521 Pcbp2 NM\_011049 18555 Pctk1 NM\_011069 18632 Pex11b NM 011072 18643 Pfn1 NM\_011102 18752 Prkcc NM\_011104 18754 Prkce NM\_011109 18782 Pla2g2d NM\_011116 18807 Pld3 NM\_011156 19072 Prep NM\_011165 19110 Pripa NM\_011176 19143 St14 NM 011196 19218 Ptger3 NM\_011197 19221 Ptgfrn NM\_011200 19243 Ptp4a1 NM\_011201 19246 Ptpn1 NM\_011202 19247 Ptpn11 NM\_011203 19248 Ptpn12 NM\_011219 NM\_011231 19352 Rabggtb NM\_011242 19395 Rasgrp2 NM\_011244 19411 Rarg NM\_011246 19419 Rasgrp1 NM\_011251 19654 Rbm6 NM\_011287 19896 Rpl10a NM\_011288 19935 Mrpl23 NM\_011292 20005 Rpl9

Figure 1-22

| NM_011293 | 20022 Polr2j  |
|-----------|---------------|
| NM_011305 | 20181 Rxra    |
| NM_011310 | 20197 S100a3  |
| NM_011312 | 20199 S100a5  |
|           |               |
| NM_011328 | 20287 Sct     |
| NM_011341 | 20318 Sdf4    |
| NM_011343 | 20335 Sec61g  |
| NM_011352 | 20361 Sema7a  |
| NM_011356 | 20378 Frzb .  |
| NM 011360 | 20392 Sgce    |
| NM_011389 | 20495 Slc12a1 |
| NM_011421 | 20597 Smpd1   |
| NM_011423 | 20601 Smr3    |
|           | 20613 Snai1   |
| NM_011427 |               |
| NM_011428 | 20614 Snap25  |
| NM_011443 | 20674 Sox2    |
| NM_011444 | 20678 Sox5    |
| NM_011478 | 20766 Sprr3   |
| NM_011492 | 20869 Stk11   |
| NM_011500 | 268980 Strn   |
| NM_011503 | 20911 Stxbp2  |
| NM_011512 | 20932 Surf4   |
| NM 011522 | 20974 Syngr3  |
| NM_011529 | 21353 Tank    |
| NM_011539 | 21391 Tbxas1  |
| NM_011541 | 21399 Tcea1   |
|           |               |
| NM_011543 | 21402 Skp1a   |
| NM_011550 | 21428 Tcfl4   |
| NM_011552 | 21453 Tcof1   |
| NM_011577 | 21803 Tgfb1   |
| NM_011585 | 21841 Tia1    |
| NM_011588 | 21849 Trim28  |
| NM_011595 | 21859 Timp3   |
| NM_011597 | 21873 Tjp2    |
| NM_011601 | 21893 Tlm     |
| NM_011607 | 21923 Tnc     |
| NM_011617 | 21948 Tnfsf7  |
| NM_011622 | 21968 Tom1    |
| NM_011623 | 21973:Top2a   |
| NM_011626 | 21982 Tpari   |
|           |               |
| NM_011638 | 22042 Trfr    |
| NM_011656 | 22156 Tuft1   |
| NM_011660 | 22166 Txn1    |
| NM_011665 | 22196 Ube2i   |
| NM_011670 | 22223 Uchl1   |
| NM_011673 | 22234 Ugcg    |
| NM_011674 | 22239 Ugt8    |
| NM_011705 | 22367 Vrk1    |
| NM_011714 | 22385 Baz1b   |
| NM_011740 | 22631 Ywhaz   |
| NM_011772 | 22781 Znfn1a4 |
| NM_011787 | 23802 Amfr    |
| NM_011791 | 23808 Ash2l   |
|           |               |
| NM_011793 | 23825 Banf1   |
| NM_011801 | 23837 Cfdp    |
| NM_011802 | 270166 Clpx   |
|           |               |

| 23873 Faim     |
|----------------|
| 23877 Fiz1     |
| 23920 Insrr    |
| 23924 Katna1   |
| 23936 Lynx1    |
| 23965 Odz3     |
| 23991 Cib1     |
| 23996 Psmc4    |
| 24017 Rnf13    |
| 24055 Sh3bp2   |
| 24102 Trex2    |
| 24109 Ubl3     |
| 24110 Usp18    |
| 24128 Xrn2     |
| 26372 Clcn6    |
| 26383 Fto      |
| 26394 Lypla2   |
| 26405 Mon2ka   |
| 26425 Nubp1    |
| 26432 Plod2    |
| 26433 Plod3    |
| 26442 Psma5    |
| 26446 Psmb3    |
| 26562 Ncdn     |
| 26570 Slc7a11  |
|                |
| 26874 Abcd2    |
| 26920 Ma2a8    |
| 26926 Pdcd8    |
| 26940 Sitpec   |
| 26941 Slc9a3r1 |
| 26943 Tde1     |
| 26944 Tinag    |
| 26950 Vsnl1    |
| 93843 Pnck     |
| 26992 Brd7     |
| 11625 Ahsg     |
| 12181 Bop1     |
| 14234 Foxc2    |
| 14455 Gas5     |
| 14789 Grcb     |
| 14790 Grcc10   |
| 14870 Gstp2    |
| 14939 Gzmb     |
| 15452 Hprt     |
| 15505 Hsp105   |
| 16511 Kcnh2    |
| 16880 Lifr     |
| 16997 Ltbp2    |
| 17192 Mbd3     |
| 17203 Mc5r     |
| 17748 Mt1      |
| 18263 Odc      |
| 18286 Odf2     |
| 18366 Olfr65   |
| 18508 Pax6     |
| 19027 Sypl     |
|                |

| NM_013638    | 19120 Prm3                |
|--------------|---------------------------|
| NM_013641    | 19216 Ptger1              |
| NM_013645    | 19293 Pva                 |
| NM_013647    | 20055 Rps16               |
| NM_013666    | 225742 Siat8e             |
|              | 20964 Syn1                |
| NM_013680    | •                         |
| NM_013684    | 21374 Tbp                 |
| NM_013703    | 22359 Vldlr               |
| NM_013718    | 27096 Trappc3.            |
| NM_013722    | 27204 Syn3                |
| NM_013723    | 27205 Podxl               |
| NM_013727    | . 27215 Azi2              |
| NM_013736    | 27224 Tceb3               |
| NM_013738    | 27260 Plek2               |
| NM_013750    | 27280 Phlda3              |
| NM_013759    | 27361 Sepr                |
| NM_013761    | 27364 Srr                 |
| NM_013762    | 27367 Rpl3                |
| NM_013779    | 27385 Magel2              |
|              | 27414 Gnefr               |
| NM_013789    | 27414 Ghen<br>27416 Abcc5 |
| NM_013790    |                           |
| NM_013826    | 17434 Mocs2               |
| NM_013835    | 20822 Ssa2                |
| NM_013843    | 24132 Zfp118              |
| NM_013844    | 24135 Zfp68               |
| NM_013859    | 29805 ORF6                |
| NM_013865    | 29812 Ndr3                |
| NM_013867    | 29815 Bcar3               |
| NM_013869    | 29820 Tnfrsf19            |
| NM_013890    | 30050 Fbxw2               |
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| NM_013933 .  | 30960 Vapa                |
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| NM_015764    |                           |
| NM_015776    | 50530 Mfap5               |
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| NM_015806    | 50772 Mapk6               |
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| NM_016665    | 20892 Stra13              |
| NM_016666    | 11632 Aip                 |
| NM_016673    | 12804 Cntfr               |
| NM_016676    | 19325 Rab10               |
| NM_016692    | 16319 Incenp              |
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| NM_016698    | 50849 Rnf10               |
| NM_016705    | 16564 Kif21a              |
| NM_016714    | 18141 Nup50               |
| NM_016717    | 50880 Scly                |
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|------------------------|---------------------------------------|
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| NM_019432              | 170706 Pr1                            |
| NM_019435              | 104130 Np15                           |
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| NM 019458              | 54624                                 |
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| NM_019510              | 22065 Trpc3                           |
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| NM_019550              | 56195 Ptbp2                           |
| NM_019551              | 56196 Ttrap                           |
| NM_019571              | 56224 Tm4sf9                          |
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| NM_019575              | 56214 Scamp4                          |
| NM_019635              | 56274 Stk3                            |
| NM_019638              | 56449 Csda                            |
| NM_019639              | 22190 Ubc                             |
| NM_019640              | 56305 Pitpnb                          |
|                        | 56306 Tera                            |
| NM_019643              | 56348 Hsd17b12                        |
| NM_019657              | 56437 Rrad                            |
| NM_019662              |                                       |
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| NM_019667              | 56324 Stam2                           |
| NM_019679              | 57778 Fmnl<br>56506                   |
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| NM_019697              | 56513 Pard6a<br>16508 Kcnd2           |
| NM_019703              | 56421 Pfkp                            |
| NM_019705              | 24105 AL033326                        |
| NM_019705              | · · · · · · · · · · · · · · · · · · · |
| —                      | 12554 Cdh13<br>21888 Tle4             |
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| NM_019724              | 17389 Mmp16                           |
| NM_019725              | 21886 Tle2                            |
| NM_019741              | 56485 Slc2a5                          |
| NM_019743              | 56353 Rybp                            |
| NM_019746              | 56330 Pdcd5                           |
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| NM_019759              | 56429 Dpt                             |
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| NM_019767              | 56443 Arpc1a                          |
| NM_019768              | 56397 Morf4l2                         |
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| NM_019772              | 56372                                 |
|                        |                                       |

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NM\_025301 27397 Mrpl17 27398 Mrpl2 NM\_025302 108098 Surb7 NM\_025315 NM\_025316 66046 Ndufb5 NM\_025319 66050 NM\_025323 66055 20698 Sphk1 NM\_025367 NM\_025368 66124 66147 NM\_025383 NM\_025386 66153 Fbxo36 NM\_025387 66154 66156 Anapc11 NM\_025389 22273 Uqcrc1 NM\_025407 66202 NM\_025419 NM\_025424 66208 NM\_025427 66214 66266 NM\_025456 NM\_025457 66268 NM\_025460 66271 NM\_025479 66308 NM\_025512 66361 66373 Lsm5 NM\_025520 NM\_025529 66387 Nudt8 NM\_025547 66410 NM\_025561 66439 NM\_025563 66443 NM\_025566 NM\_025573 108014 Sfrs9 NM\_025577 66462 329910 Thea NM\_025590 NM\_025594 66492 NM\_025612 110323 Cox6b NM\_025628 NM\_025633 66559 Metapl1 66599 Rad52b NM\_025654 66607 Ms4a4d NM\_025658 66624 NM\_025668 66687 Tbc1d15 NM\_025706 NM\_025708 . 66690 NM\_025714 52184 D3Ertd250e NM\_025718 66705 Dnase1l2 NM\_025730 66725 66736 NM\_025736 66756 NM\_025747 NM\_025748 66757 Deadc1 NM\_025766 66784 66815 NM\_025779 66822 Fbxo25 NM\_025785 NM\_025806 66857 NM\_025808 66863 Lztr1 NM\_025834 66901 Proz NM\_025835 66904 Pccb 66911 NM\_025839 NM\_025849 66928 52665 Echdc1 NM\_025855

Figure 1-31

66950

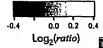
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                         94094 Trim34
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| NM_030716 | 80906 Kcnip2   |
| NM_030717 | 80907 Lactb    |
| NM_030719 | 80909 Gats     |
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| NM_030749 | 81500          |
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| NM_031174 | 13508 Dscam    |
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| NM_031248 | 22122 Tsta3    |
|           | 83409          |
| NM_031249 | 83410 Cstf2t   |
| NM_031261 | 83457 Fthl17   |
| NM_031391 | 83602 Gtf2a1   |
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| NM_031401 | 83679 Usmg4    |
| NM_031404 | 83766 Acti6    |
| NM_031493 | 27084 XIr5 .   |
| NM_031879 | _              |
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| NM_033561 | 22384 Wbscr1   |
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| NM_033616 | 114564 Csprs   |
| NM_033652 | 110648 Lmx1a   |
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| NM_053075 | 19744 Rheb     |
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|           |                |
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| S82853    | 21915 Dtymk    |

| •      |                   |
|--------|-------------------|
| U14172 | 13669 Eif3s10     |
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| U51204 | 100732 Mapre3     |
| U51279 | 12048 Bcl2l       |
| U61363 | 21888 Tle4        |
| U64606 | 17977 Ncoa1       |
| U70033 | 20541 Slc8a1      |
| U85993 | 319845            |
| U89513 | 73647 Capn9       |
| X13721 | 15416 Hoxb8       |
| X16493 | 22640 Zfp1        |
| X61453 | 50884 Nckap1      |
| X74504 | 27883 D16H22S680E |
| X76850 | 17164 Mapkapk2    |
| X81365 | 21367 Cntn2       |
| X84014 | 16774 Lama3       |
| X97581 | 20689 Sall3       |
| X98848 | 18639 Pfkfb1      |
| Y12713 | 27282 Erv4        |
| Y15910 | 54004 Diap2       |
| Y17793 | 19876 Robo1       |
|        |                   |



## Figure 2

|         | ACCESS    | Locus  | GENE    | LOCALIZATION                     | BIOLOGICAL FUNCTION       |
|---------|-----------|--------|---------|----------------------------------|---------------------------|
| 11.     | NM_024471 | 79464  | Llas    | mitochondrion                    | misc                      |
|         | NM_019487 | 56016  | Hebp2   | cytoplasm;extracellular          | misc                      |
|         | NM_011793 | 23825  | Banf1   | Integral to membrane;nucleus     | misc                      |
|         | BC004811  | 224742 | Abcf1   | integral to plasma membrane      | transport                 |
|         | NM_010250 | 14394  | Gabra1  | extracellular space;integral to  | signaling                 |
|         | NM_009557 | 22704  | Zfp46   | transcription factor complex     | transcription             |
| AL TH   | AF104414  | 16798  | Lats1   |                                  | signaling?                |
|         | L32178    | 232333 | Slc6a1  | integral to plasma membrane      | transport                 |
| =       | AF 407579 | 140859 | Nek8    |                                  | sIgnaling?                |
|         | AK016018  | 75163  |         |                                  | unknown                   |
|         | NM_008703 | 18101  | Nmbr    | Integral to plasma membrane      | signaling (receptor)      |
|         | NM_007574 | 12262  | C1qg    | extracellular space              | signaling                 |
|         | AK005842  | 71840  |         | membrane                         | ctsk                      |
|         | U14172    | 13669  | Eif3s10 |                                  | translation               |
|         | NM_008955 | 19202  | Psx1    | transcription factor complex     | transcription             |
|         | M36654    | 15412  | Hoxb4   | transcription factor complex     | transcription             |
|         | NM_018754 | 55948  | Sfn     | cytoplasm;extracellular space    | celi cycle ?              |
|         | NM_007474 | 11833  | Адр8    | Integral to plasma membrane;mito | transport                 |
|         | AK018561  | 71546  |         |                                  | unknown                   |
| MILLI   | AK002458  | 68339  |         | myosin                           | unknown                   |
| MULLI   | NM_054066 | 114875 | Plcz1   |                                  | signaling                 |
|         | NM_019703 | 56421  | Pfkp    | 6-phosphofructokinase complex    | meta bolis m              |
|         | NM_017461 | 54204  | sep-01  | mitochondrion                    | cell cycle                |
|         | NM_009228 | 20648  | Snta1   | cytoskeleton;postsynaptic membra | signaling                 |
|         | NM_022418 | 64295  |         | extracellular space;integral to  | unknown                   |
|         | BC011091  | 109815 | H47     | Integral to membrane             | unknown                   |
|         | NM_007557 | 12162  | Bmp7    | extracellular space              | signaling (secreted)      |
|         | AK006467  | 75568  |         | protein kinase CK2 complex       | signaling                 |
|         | NM_011102 |        | Prkcc   |                                  | signaling                 |
| 12,3    | AK011127  | 67031  | Upf3a   |                                  | misc                      |
|         | NM_008604 |        | Mme     | integral to plasma membrane      | protein degradation       |
|         | AK019929  | 78283  |         |                                  | unknown                   |
|         | AK019168  | 68991  |         | membrane                         | unknown                   |
|         | AK018155  | 70750  |         | extracellular space              | tumor related (secretion) |
|         | AK007941  | 67509  |         |                                  | unknown                   |
|         | AF 223953 | 54208  | Arl6ip1 | cytosol;integral to membrane;tra | translation               |
| -       | NM_015764 |        |         | 1.20.00                          | transport                 |
| !       | NM_008538 |        | Marcks  | membrane                         | signaling                 |
|         | NM_019639 |        | Ubc     | nucleus                          | protein degradation       |
| ; ,     | AK016247  | 18640  | P fkfb2 | cytosol                          | metabolism                |
| 1       | AK011544  | 66254  |         |                                  | transcription             |
|         | NM_019509 |        |         |                                  | unknown                   |
| 1       | NM_008120 |        | Gja 4   | connexon complex;integral to mem | signaling (receptor)      |
|         | NM_008085 |        | Gapds   |                                  | metabolism                |
| <u></u> | AK015402  | 74862  |         | <del></del>                      | unknown                   |

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| Figure 3 | BIOLOGICAL FUNCTION | имгомп                           | transport                   | unknown       | misc                 | unknown              | misc                 | unknown  | unknown                    | lipid metabolism | transcription                | transcription                     | unknown  | metabolism    | unknown   | transport?    | unknown  | ceil adh                         | unknown  | misc                         | lipid metabolism                 | unknown | immune response     | unknown  | metabolism    | apoptosis | unknown              | protein degradation              | transcription                 | signaling        | unknown              | signaling (receptor) | transport                    | unknown | пикромп   | unknown   | unknown | unknown        | tumor related |
|----------|---------------------|----------------------------------|-----------------------------|---------------|----------------------|----------------------|----------------------|----------|----------------------------|------------------|------------------------------|-----------------------------------|----------|---------------|-----------|---------------|----------|----------------------------------|----------|------------------------------|----------------------------------|---------|---------------------|----------|---------------|-----------|----------------------|----------------------------------|-------------------------------|------------------|----------------------|----------------------|------------------------------|---------|-----------|-----------|---------|----------------|---------------|
|          | LOCALIZATION        | nascent polypeptide-associated c | Integral to plasma membrane | extracellular | integral to membrane | Integral to membrane | Integral to membrane |          | cytoplasmic dynein complex | mitochondrion    | transcription factor complex | focal adhesion; transcription fac |          | mitochondrion |           | mitochondrion |          | extracellular matrix;extracellul |          | transcription factor complex | integral to plasma membrane;pero |         | extracellular space |          | mitochondrion | nucleus   | integral to membrane | Golgi apparatus;endoplasmic reti | extrachromosomal circular DNA | synaptic vesícle | integral to membrane | integral to membrane | extracellular space;membrane |         |           |           |         | Golgi membrane | cytoplasm     |
|          | GENE                |                                  | Sic4a1ap                    |               | Dom3z                | Popdc2               | ď                    |          | Tcte11                     | Lypla1           | Psx1                         | Taf10                             |          | Aldh6a1       |           | Akap10        |          | Dpt                              |          | Zfp118                       | Abcd2                            |         | CcI20               |          | Glud          | Noi3      | Nckap1               | Fbxw7                            | Pet2                          | Rab3b            | Abhd2                | Ors19                | Gp2                          |         | Ubi3      | Fbxo25    |         | Gorasp2        |               |
|          | Locus               | 67693                            | 20534                       | 72174         | 112403               | 64082                | 18431                | 70114    | 67117                      | 18777            | 19202                        | 24075                             | 67622    | 104776        | 76484     | 56697         | 67059    | 56429                            | 72681    | 24132                        | 26874                            | 67669   | 20297               | 77506    | 14661         | 78688     | 50884                | 50754                            | 18630                         | 80669            | 54608                | 57250                | 67133                        | 68151   | 24109     | 66822     | 72704   | 70231          | 246257        |
|          | ACCESS              | M 026318                         | AF035526                    | AK013145      | NM 033613            | NM 022318            | NM_021879            | AK008151 | NM 025975                  | NM 008866        | NM 008955                    | NM 020024                         | AK012601 | AF297860      | AK 010466 | NM 019921     | AK013055 | NM 019759                        | AK012922 | NM 013843                    |                                  |         | NM 016960           | AK020225 | NM 008133     | AK021023  | X61453               | NM 080428                        | NM 008821                     | NM 023537        | NM 018811            | AF121976             | 6                            | 1       | NM 011908 | 1         | 1       |                |               |
| _        | T 🖁                 | The second                       |                             | 4             |                      |                      |                      |          |                            |                  |                              |                                   |          |               |           |               |          |                                  |          |                              |                                  |         |                     | _        | )             | -         | ,                    | -                                |                               |                  | _                    |                      |                              |         | 1         | egione, s |         |                |               |

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| Figure 4 | BIOLOGICAL FUNCTION | ctsk   | ranslation                         | metabolism | signaling (receptor) | apoptosis                        | transcription  | unknown  | protein degradation | ctsk                             | unknown                                 | bansport                         | signaling (development)      | unknown    | unknown  | misc     | ranscription | unknown                         | Immune response | unknown  | growth factor (secreted) | unknown   | lipid metabolism                 | signaling | signaling | metabolism                      | misc                     | ecm                 | Signaling          |
|----------|---------------------|--------|------------------------------------|------------|----------------------|----------------------------------|----------------|----------|---------------------|----------------------------------|---|----------------------------------|------------------------------|------------|----------|----------|--------------|---------------------------------|-----------------|----------|--------------------------|-----------|----------------------------------|-----------|-----------|---------------------------------|--------------------------|---------------------|--------------------|
|          | LOCALIZATION        |        | cytosolic ribosome (sensu Eukary t | cytoplasm  | membrane;plasma memb | basement membrane;integral to me | nuclear matrix | 1        | <b>3.</b>           | actin cytoskeleton;microtubule c | cytoplasm                               | integraf to membrane;signal reco | extracellular space;membrane | 7          | ח        |          | nucleus      | extracellular space;integral to | <u>.</u>        | ח        | extracellular space      | 7         | endoplasmic reticulum;extracellu | S         | S         | extrachromosomal circular DNA m | mitochondrial ribosome n | extracellular space | soluble fraction S |
|          | GENE                | Mapre3 | Rps19                              | Prps1      | Tacr3                | Cfdp                             | Tcerg1         | Hbld2    | Ube2i               | Macfl                            |   | Srpr                             | Mesp2                        | D8Ertd531e |          |          | Tcea1        |                                 |                 |          | Inhbe                    |           | Rpn1                             | Pik3r4    | Nek6      |                                 | Mrpi30                   | Hs6st2              | Ptpn12             |
|          | SNOOT               | 100732 | 20085                              | 19139      | 21338                | 23837                            | 56070          | 69046    | 22196               | 11426                            | 67120                                   | 67398                            | 17293                        | 52348      | 77039    | 74320    | 21399        | 67017                           | 68032           | 06099    | 16326                    |           | 103963                           | 75669     | 59126     | 69487                           | 107734                   | 50786               | 19248              |
|          | ACCESS              | U51204 | NM_023133                          | AK011034   | NM 021382            | NM 011801                        | NM_019512      | AK007415 | NM_011665           | AF150755                         | NM 025978                               | BC012512                         | NM_008589                    | AK016385   | AK009856 | AK003256 | NM_011541    | BC016210                        | 6               | AK004431 | 22                       | NM_025612 | BC016080                         | AK008703  | NM_021606 | AK009123                        | AK009074                 | 6                   | 1 1                |
|          | F 8                 | io)    |                                    | ļ.,-       |                      | 1,11                             | 1              | i i      |                     |                                  | *************************************** | 1                                | _<br>                        |            |          |          |              |                                 |                 |          |                          |           |                                  |           |           |                                 |                          |                     |                    |

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|          | ١                   | i               | 1             | ı                            | 1                               | 1         | 1        | 1        | 1                    | 1                                | 1                    | 1                        | i                                 | 1        | 1                                | 1                          | 1                     | 1        |
|----------|---------------------|-----------------|---------------|------------------------------|---------------------------------|-----------|----------|----------|----------------------|----------------------------------|----------------------|--------------------------|-----------------------------------|----------|----------------------------------|----------------------------|-----------------------|----------|
| rigure 5 | BIOLOGICAL FUNCTION | unknown         | transcription | transcription                | cell adh                        | unknown   | unknown  | unknown  | transport            | signaling                        | signaling (secreted) | ransport .               | signaling (receptor)              | unknown  | signaling                        | translation?               | transcription         | unknown  |
|          | LOCALIZATION        | membrane        |               | transcription factor complex | extracellular space;Integral to |           |          |          | Integral to membrane | calcium-calmodulin-dependent pro |                      | Golgi apparatus;membrane | integral to membrane; external si | membrane | heterotrimeric G-protein complex | protein kinase CK2 complex | mitochondrion;nucleus |          |
|          | GENE                |                 |               | Pax6                         | Cdh8                            |           |          |          | Fxyd7                | Pnck                             |                      | Copg                     | Robo4                             |          | Rgs6                             | BC002216                   | Smcx                  |          |
|          | Locus               | 67602           | 77318         | 18508                        | 12564                           | 75656     | 73493    | 76291    | 57780                | 93843                            | 67042                | 54161                    | 74144                             | 67490    | 50779                            | 79554                      | 20591                 | 74919    |
|          | ACCESS LOCUS GENE   | NM 026267 67602 | AK021066      | NM_013627 18508              | NM_007667 12564                 | AK 006141 | AK006938 | AK003388 | NM 022007            | NM 012040                        | AK011196             | NM 017477                | AK004723                          | AK007993 | AF061933                         | NM 024472                  | AF127245              | AK015555 |
|          | ٦ <u>.</u>          |                 |               |                              |                                 |           |          |          |                      |                                  |                      |                          |                                   |          |                                  |                            |                       |          |

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| Figure 6 A | BIOLOGICAL FUNCTION   | cell cycle             | unknown  | transport            | unknown           | ctsk                      | signaling (receptor)            | signaling (receptor)        | unknown  | unknown  | unknown   | илкпомп         | unknown  | protein degradation | apoptosis                        |           |
|------------|-----------------------|------------------------|----------|----------------------|-------------------|---------------------------|---------------------------------|-----------------------------|----------|----------|-----------|-----------------|----------|---------------------|----------------------------------|-----------|
|            | LOCALIZATION          | tight junction         |          | integral to membrane |                   | Z disc;actin cytoskeleton | extracellular space;integral to | integral to plasma membrane |          |          |           |                 |          |                     | 26S proteasome;cytoplasm;nucleus |           |
|            | GENE                  | Pard6a                 |          | S lc4a8              |                   | Pdlim3                    | Axi                             | Chrm3                       |          |          |           |                 |          | Fbxl6               | P dcd2                           |           |
|            | rocus                 | 56513                  | 75829    | 59033                | 72309             | 53318                     | 26362                           | 12671                       | 75359    | 67059    | 268721    | 68014           | 72792    | 30840               | 18567                            |           |
|            | 0.3 ACCESS LOCUS GENE | NM 019695 56513 Pard6a | AK015971 | NM_021530 59033      | - AK 009669 72309 | NM 016798 53318           | NM 009465 26362 Axi             | NM 033269 12671             | MK016128 | AK013055 | AK 009454 | NM_026507 68014 | AK013367 | NM 013909 30840     | NM 008799 18567                  | B2<br>BM2 |
|            | <u> </u>              | $Log_2(ratio)$         |          |                      |                   |                           |                                 |                             |          |          |           |                 |          |                     |                                  |           |



# Figure 6 B

| 1  | ACCESS                 | LOCUS          | GENE                                  | LOCALIZATION  | BIOLOGICAL FUNCTION        |
|--|------------------------|----------------|---------------------------------------|---|----------------------------|
| 54.516                                   | NM_009153              | 20347          | Sema3b                                | endoplasmic reticulum;extracellu                    | growth factor (secreted)   |
|  | NM_008604              | 17380          | Mme                                   | integral to plasma membrane                         | protein degradation        |
|  | NM_025922              | 16434          | Itpa                                  |   | metabolism                 |
|  | AK009187               | 69482          |                                       |   | unknown                    |
|  | NM_009551              | 22682          | Zfp216                                |   | transcription?             |
|  | AK008753               | 70387          |                                       |   | unknown                    |
|  | NM_008339              | 15985          | Cd79b                                 | extracellular space; integral to                    | signaling (receptor)       |
| ARREST CHARLES                           | AK005734               | 75470          |                                       |   | unknown                    |
|  | NM_010010              | 13116          | Cyp46a1                               | endoplasmic reticulum;extracellu                    | transport                  |
| SECOND CONTRACTOR                        | AK003132               | 75406          | Ndufs7                                | extracellular space; mitochondrio                   | metabolis m                |
|  | AB036708               | 170828         | Vgli1                                 |   | transcription              |
| CONTRACTOR OF THE                        | NM_019825              | 56406          | Ncoa6                                 | transcription factor complex                        | tra ns cription            |
|  | NM_021459<br>NM_021291 | 16392<br>30962 | Isl1                                  | nucleus<br>Integral to membrane                     | transcription              |
| THE PERSON IN PROPERTY.                  | M36514                 | 22688          | Slc7a9<br>Zfp26                       |   | transport                  |
| The state of the state of the            | NM_026908              | 69008          | Lipzo                                 | nucleus   | transcription              |
|  | AK012733               | 76366          | <del></del>                           | voltage-gated potassium channel                     | unknown<br>transcription?  |
| CHARLES TO SHARE                         | AK018089               | 76137          |                                       | volungo ga aca potassidiri criarinier               | unknown                    |
|  | AK006222               | 72251          |                                       |   | unknown                    |
| THE PERSON NAMED IN COLUMN 2 IN COLUMN 2 | AB047921               | 67210          | · · · · · · · · · · · · · · · · · · · | nucleus   | transcription?             |
| atin                                     | NM_026298              | 67661          | Wim                                   | kinesin complex                                     | unknown                    |
|  | NM_011202              | 19247          | Ptpn11                                | cytoskeleton  | signating                  |
|  | AK007933               | 72282          |                                       |   | unknown                    |
| CATALOG CO.                              | AK003282               | 66496          |                                       |   | unknown                    |
| 100000000000000000000000000000000000000  | AK018495               | 74536          |                                       |   | unknown                    |
|  | AK002769               | 71683          | G урс                                 |   | unknown                    |
|  | NM_019977              | 56727          | Aldri6                                | cytoplasm;inclusion body                            | metabolism                 |
|  | NM_010473              | 15464          | Hrc                                   | extracellular space;smooth endop                    | signaling                  |
|  | AK010476               | 71979          | 015.457                               |   | unknown                    |
|  | NM_019475<br>NM_019741 | 29847          | Olfr157                               | Integral to plasma membrane                         | signaling (receptor)       |
|  | NM_009660              | 56485<br>11687 | Sic2a5                                | Integral to membrane                                | transport                  |
| 13.                                      | NM_024199              |                | Alox15<br>Cstf1                       | plasma membrane mRNA cleavage stimulating factor    | lipid metabolism           |
| 1.00                                     | NM_053178              |                | CSUI                                  | Tilk NA cleavage sumulating factor                  | transcription              |
| 7  | NM_011638              |                | Trfr                                  | endosome;integral to membrane;pl                    | metabolism ? signaling     |
|  | AK004679               | 73340          | Nptxr                                 | chromatin;extracellular space;in                    | transcription              |
| 1. 189                                   | NM_008492              |                | Ldh2                                  | cytosol   | metabolism                 |
|  | AK007494               | 69064          |                                       |   | unknown                    |
| 92.                                      | AK020410               | 52120          | D8E rtd354e                           | Integral to membrane                                | unknown                    |
|  | AK004803               | 66875          |                                       | eukaryotic translation elongatio                    | translation?               |
| 2187                                     | AJ131821               | 11938          | Atp2a2                                | integral to plasma membrane;micr                    | transport                  |
|  | NM_009079              |                | R pl22                                | cytosolic ribosome (sensu Eukary                    | translation                |
| _النا                                    | AK016352               | 66722          |                                       | axoneme;microtubule                                 | unknown                    |
|  | NM_025736              |                |                                       | nucleus   | unknown                    |
| <b>}}-</b>                               | NM_016973              |                | S lat7f                               | Golgi apparatus;integral to memb                    | mlsc                       |
| ┝╌╂╌                                     | NM_009854<br>AK019216  | 78832          | Cd7                                   | extracellular space; integral to                    | Immune response (receptor) |
| <b>¦</b>                                 | NM_015776              |                | Mfap5                                 | ovtra politilar e pogg lass Et -P                   | unknown                    |
|  | NM_007995              |                | Fona                                  | extracellular space;microfibril extracellular space | lmmuno socione (constatt)  |
| 1.                                       | AK019744               | 78931          | i VIII                                | cassendial space                                    | immune response (secreted) |
|  | AK008994               | 107358         | ····                                  | extracellular space; Integral to                    | unknown<br>transport       |
| ****                                     | AK017726               | 70625          | Crsp7                                 | transcription elongation factor                     | transcription              |
| 1 :-                                     | AK004139               | 68735          | <del></del>                           | mitochondrion;ribosome                              | translation                |
| .  | AK010312               | 76483          |                                       | integral to membrane                                | Unknown                    |
|  | AK005661               | 69082          |                                       |   | signaling (receptor)       |
| The street                               | AK013837               | 73090          |                                       |   | unknown                    |
|  | NM_00948               |                | Usp9x                                 | 26S proteasome                                      | protein degradation        |
|  | BC 005658              | 69957          | Cdc16                                 |   | cell cycle                 |
| ما المات                                 | NM_02542               |                |                                       | cytopias m; nucleus                                 | cell cycle                 |
|  | NM_02342               |                | Hist1h2bc                             | nucleos ome; nucleus                                | mlsc                       |
| -  | AK012610               | 72654          |                                       |   | unknown                    |
|  | NM_01174               |                | Ywhaz                                 | cytopias m  | signaling                  |
|  | AF062567               | 20687          | S p3                                  | transcription factor complex                        | transcription              |
|  | _                      |                |                                       |   |                            |

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| NM_007761 12909   AK013044 106200   AK013044 106200   NM_031174 13508   NM_011492 20869   AK002490 20195   NM_019724 17389   NM_019724 17389   NM_018798 54611   CONTROLOGO  | 12909 Crcp<br>106200<br>13508 Oscam |            |                                  | cianalina (recorber)  |
|--|-------------------------------------|------------|----------------------------------|-----------------------|
| AK013044   |                                     |            |                                  | signalling (receptor) |
| NM   031174   NM   011492   AK002490   AK002490   NM   019724   NM   009579   AK011736   AK011736   AK011736   AK011736   AK012895   NM   018798   AK012895   NM   025457   NM   025457   NM   025457   NM   023697   AK012896   AK01 |                                     |            |                                  | translation?          |
| NM_011492  |                                     |            | extracellular space;integral to  | cell adh              |
| AK002490   | 20869 Stk11                         |            | microtubule cytoskeleton         | Signaling             |
| NM_019724   NM_009579   AK01786   AK01786   NM_018798   AK013995   NM_013995   NM_013995   NM_013995   NM_013995   NM_013995   NM_013995   NM_025457   NM_025497   NM_023697   NM_032697   NM_036697   NM_036697 | 20195 S100a11                       |            | cytoplasm                        | signaling             |
| NM_009579  | 17389 Mmp16                         |            | extracellular matrix;extracellul | protein degradation   |
| AK017736   | 82 Slc30a1                          |            | extracellular space;Integral to  | transport             |
| NM_018779   BC004766   BC004766   NM_018985   NM_018969   NM_025457   NM_025457   NM_023695   NM_023697   NM_023597   NM_023597   NM_023597   NM_023597   NM_023597   NM_023597   NM_023597   NM_018557   NM_01885   NM_01 | 70616 Sf4                           |            | intracellular                    | transcription         |
| BC004766   NM_018798   NM_018395   NM_018369   NM_008969   NM_025457   NM_023605   NM_023605   NM_023605   NM_023597   NM_023597   NM_023597   NM_023597   NM_023597   NM_018357   NM_018357   NM_018365   NM_0183655   NM_018365   NM_0 | 11 Pde3a                            |            | Integral to membrane             | signaling             |
| NM_018798  | 99 Ptcd1                            |            | rlbosome                         | unknown               |
| AK013995   |                                     |            | endoplasmic reticulum membrane   | unknown               |
| NM_011356  | 73078                               |            | mitochondrion                    | misc                  |
| NM_008969  | 78 Frzb                             |            | extracellular space;membrane     | signaling             |
| NM_025457 NM_016698 NM_023605 RC005788 AF237628 NM_023597 NM_019714 NM_019714 NM_019714 NM_019714 NM_01985   |                                     |            | cytoplasm;extracellular space;me | signaling             |
| NM_016698<br>NM_023605<br>BC005788<br>AF237628<br>NM_023597<br>L17069<br>NM_019714<br>X76850<br>AK012885   |                                     |            |                                  | unknown               |
| NM_023605<br>BC005788<br>AF237628<br>NM_023597<br>L17069<br>NM_019714<br>X76850<br>AK012885  | 49 Rnf10                            | 0          |                                  | transcription         |
| BC005788 AF237628 NM_023597 L17069 NM_019714 X76850 AK012885   | 38 Fbxo9                            |            | ubiquitin ligase complex         | protein degradation   |
| AF237628<br>NM_023597<br>L17069<br>NM_019714<br>X76850<br>AK012885<br>AM 02677   | 94 Cnn3                             |            | cytoskeleton                     | ctsk?                 |
| NM_023597<br>L17069<br>NM_019714<br>X76850<br>AK012885   | 77 Lmod2                            |            | cytoskeleton                     | ctsk                  |
| 35   |                                     |            | membrane                         | transport             |
| 714  | 214162 MII                          | _          | nucleus                          | Transcription         |
| 85   | 38 Tle4                             |            | nucleus                          | transcríption         |
| 85   |                                     | Mapkapk2   |                                  | signaling             |
| L  | 12 Mrpl55                           |            | membrane                         | пкпомп                |
|  | 66462                               |            | •                                | unknown               |
| NM 018731 11944  | 14 Atp4a                            |            | Integral to membrane             | metabolism            |
| NM 007555 12160  |                                     |            | extracellular space              | ЕСМ                   |
| 1  | 112                                 |            |                                  | unknown               |
| AK002574 68348   | 88                                  |            |                                  | unknown               |
| AK007389 107686  | 386 Snrpd2                          |            | small nucleolar ribonucleoprotei | transcription         |
| AK004975 71770   | 70 Ap2b1                            |            | clathrin adaptor complex; coated | transport             |
| NM_020567 57441  | 11 Gmnn                             |            | nucleus                          | cell cycle            |
| AK017769 70614   |                                     |            |                                  | unknown               |
| NM_007393 11461  | 1 Actb                              | S          | cytoskeleton                     | ctsk                  |
| 1 AK010752 73694   | 4                                   |            |                                  | unknown               |
| NM_009015 19366  | 6 Rad541                            |            | nucleoplasm                      | cell cycle            |
| AK002704 68365   | 5 Rab14                             | 4          |                                  | signaling             |
| AK002252 68323   | 65                                  |            |                                  | unknown               |
| NM_008537 17117  | 7 Amacr                             |            | mitochondrion;peroxisome         | metabolism            |
| AB048834 64435   | 5 Fcamr                             |            | integral to membrane             | protein degradation   |
| NM_026187 52231  |                                     | D1Ertd161e |                                  | transcription ?       |

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Figure : 8 A

| 3     |  | ACCESS    | Locus  | GENE      | LOCALIZATION   | BIOLOGICAL FUNCTION        |
|-------|--|-----------|--------|-----------|--|----------------------------|
| 22.87 | 8 1  | NM_025573 |        | Sfrs9     |  | BIOLOGICAL FUNCTION        |
|       |  | NM_023290 |        | Mkm2      | membrane;spliceosome complex                                   | transcription              |
| 2.04  |  | AK003661  | 68520  | WIKITIZ   | întracellular;membrane   | unknown                    |
|       | -  | AK016812  | 74085  |           |  | unknown                    |
| - U   | 7  | AK014680  | 74617  |           |  | tumor related              |
| -     | The section of   | AF320126  | 14816  | Grm1      | extracellular space;vacuole                                    | ecm                        |
| -     | Company of the last of the las | NM_009100 | 20129  | Rptn      | Integral to membrane   | Signating (receptor)       |
| نتنج  | -  | AK014134  | 73172  | Криг      | extracellular  | ecm                        |
| 3     |  | NM_011673 | 22234  | Ugcg      | extrachromosomal circular DNA                                  | unknown                    |
| -     | -  | BC 002191 | 108902 | ogcg      | endoplasmic reticulum;extracellu                               | lipid metabolism           |
| 77    |  | NM_025628 | 110323 | Сохбь     | extracellular space  | misc                       |
| 7.2   | 1  | AF346413  | 75526  | Spinlw1   | respiratory chain complex IV (se acrosome; extracellular space | transport                  |
| 1     | -  | NM_007524 | 12020  | Варх1     | transcription factor complex                                   | protein degradation        |
| 4     | 1  | AK013012  | 72184  | Биркі     | varistripuon lactor complex                                    | transcription              |
| -50   | -  | NM_026700 | 72104  | 2 loci    |  | unknown                    |
|       | 1  | NM_007748 | 12861  | Cox6a1    | Integral to membrane; respiratory                              | unknown                    |
|       |  | NM_023530 | 69836  | Pla2b12b  | extracellular space  | metabolism                 |
|       | 1  | AK004655  | 74107  | FIGEDIED  | exuacential space  | Ilpid metabolismi          |
| 19    | 10.7   | AF 228925 | 72088  | Ush1c     | cilium   | translation                |
| 5     |  | NM_011813 | 23877  | Fiz1      | transcription factor complex                                   | signaling                  |
| 1     |  | NM_008997 | 19326  | Rab11b    | Golgi apparatus  | transcription              |
|       | 1 2 19   | NM_020590 | 57436  | Gabarapi1 | plasma membrane  | traffic                    |
| 1     | 1  | NM_019932 | 56744  | Cxcl4     | extracellular space  | Immune response            |
| -     |  | NM_028605 | 73682  | OXCIT     | execution space  |                            |
| 1     | -  | AF 259674 | 107272 | Psat1     |  | unknown<br>metabolism      |
| 1     |  | NM_009352 | 21749  | Terf1     | chromosome-, telomeric region; nu                              | cell cycle                 |
| -     |  | NM_007791 | 13007  | Csrp1     | actin cytos keleton; nucleus                                   | ctsk                       |
|       |  | AK004617  | 66861  | Dnajc10   | endoplasmic reticulum; mitochondr                              | translation                |
| T.    |  | NM_019950 | 56773  | Chst5     | Golgi apparatus;extracellular sp                               | translation                |
|       |  | NM_011293 | 20022  | Polr2i    | DNA-directed RNA polymerase II-,                               | transcription              |
|       |  | NM_010770 | 17182  | Matn3     | extracellular matrix;extracellul                               | ecm                        |
|       | Ť  | NM_007607 | 12351  | Car4      | extracellular space;membrane                                   | metabolism (secreted)      |
|       | 1  | L34676    | 11784  | Apba2     |  | signaling                  |
|       | 7  | NM_053115 | 93732  | Acox2     | peroxisome   | metabolism                 |
|       |  | AK005048  | 223776 |           | extracellular space  | metabolism                 |
|       |  | NM_013519 | 14234  | Foxc2     | transcription factor complex                                   | transcription              |
|       |  | NM_011197 | 19221  | Ptgfm     | extracellular space; integral to                               | translation (receptor)     |
|       |  | NM_011714 | 22385  | Baz1b     | centric heterochromatin; condense                              | misc                       |
|       |  | NM_011607 | 21923  | Tnc       | extracellular space  | cell adh                   |
|       |  | BC002302  | 106583 | Rbm16     |  | cell cycle                 |
|       |  | NM_030744 |        | Ropn1     | Integral to membrane; mitochondri                              | transport                  |
|       |  | NM_016705 | 16564  | K if21a   | kinesin complex  | ctsk                       |
|       |  | AK014623  | 66701  |           |  | unknown                    |
|       |  | NM_011961 | 26432  | P lod2    | endoplasmic reticulum;extracellu                               | metabolism                 |
|       |  | NM_013723 | 27205  | Podxl     | extracellular space;Integral to                                | immune response (receptor) |
|       |  | NM_008357 | 16168  | 1115      | extracellular  | growth factor (secreted)   |
|       |  |           |        |           |  | <del></del>                |

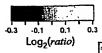


Figure 8 B

|        |            | ACCESS    | Locus  | GENE     | LOCALIZATION                       | BIOLOGICAL FUNCTION  |
|--------|------------|-----------|--------|----------|------------------------------------|----------------------|
|        |            | BC018470  | 23960  | Oas1g    |                                    | Immune response      |
|        |            | AB055635  | 26931  | Ppp2r5c  | nucleus;protein phosphatase type   | signaling            |
|        | <u>;;:</u> | AF 105217 | 57813  | Tk2      | mitochondrion                      | metabolism           |
|        | 5.1        | NM_018871 | 22628  | Ywhag    |                                    | signaling            |
|        | 12.        | AF155583  | 18089  | Nkx2-3   | transcription factor complex       | transcription        |
|        | 3.17       | NM_025424 | 66208  |          | extracellular space; membrane      | transport            |
|        |            | NM_023191 | 66317  |          | heterotrimeric G-protein complex   | signaling?           |
|        | П          | NM_024273 | 76916  |          | Integral to membrane; mitochondri  | unknown              |
|        |            | AK009460  | 66053  | P pil2   | nucleus                            | translation          |
|        |            | NM_011857 | 23965  | Odz3     | integral to plasma membrane        | unknown              |
| 200    |            | NM_011389 | 20495  | S lc12a1 | Integral to plasma membrane        | transport            |
|        |            | AK006490  | 66938  |          |                                    | Immune response ?    |
| 餾      |            | NM_008738 | 18188  | Nrtn     | extracellular space                | signaling (secreted) |
|        |            | NM_021789 | 60409  | Тгаррс4  | Golgi apparatus; endoplas mic reti | traffic              |
|        | 豳          | NM_009781 | 12288  | Cacna1c  | T-tubule;voltage-gated calcium c   | ion channel          |
|        |            | AK006079  | 76405  |          | ubiquitin ligase complex           | unknown              |
|        |            | NM_020560 | 57312  | Mrps31   | mitochondrion; nucleus             | transcription        |
|        |            | AK002667  | 67899  |          | cytoplasm                          | unknown              |
|        |            | NM_026514 | 260409 | Cdc42ep3 | plasma membrane                    | ctsk                 |
|        |            | NM_009679 | 11773  | Ap2m1    | clathrin vesicle coat coated pit   | traffic              |
|        |            | NM_013906 | 30806  | Adamts8  | extracellular matrix; extracellul  | ecm                  |
| 514    |            | NM_016714 | 18141  | Nup50    | nuclear pore                       | transport            |
|        |            | AK012134  | 72195  |          | nucleus                            | transcription        |
| 1      | 番          | NM_026908 | 69008  | **       |                                    | unknown              |
| 20     | 1          | AK019803  | 78217  |          |                                    | unknown              |
|        |            | NM_026367 | 67769  |          | extracellular matrix               | unknown              |
|        |            | AK013880  | 70223  | Nars     | cytoplasm;soluble fraction         | metabolism           |
| 1      |            | AK010147  | 73373  |          |                                    | unknown              |
|        |            | NM_019764 | 56332  | Amotl2   | tight junction                     | cell adh             |
|        |            | NM_008317 | 15586  | Hyal1    |                                    | metabolism           |
|        |            | BC003959  | 286940 | FInb     | focal adhesion;stress fibers       | ctsk                 |
| 4      |            | NM_026523 | 68039  | Nmb      | extracellular space                | signaling (secreted) |
|        |            | NM_008135 | 14664  | Slc6a9   | integral to plasma membrane        | transport            |
|        |            | AK019527  | 78903  | Wmip1    | DNA replication factor C complex   | misc                 |
|        |            | X16493    | 22640  | Zfp1     | nucleus                            | transcription        |
| H      |            | NM_019425 | 54342  | Gnpnat1  | ER-Golgi intermediate compartmen   | metabolism           |
|        |            | AK005562  | 72205  |          | microtubule associated complex     | traffic              |
|        |            | NM_021530 | 59033  | Slc4a8   | integral to membrane               | transport            |
|        | K          | NM_018874 | 18946  | Pnliprp1 | extracellular space                | metabolism           |
| 1      |            | NM_013595 |        | Mbd3     | chromatin;nucleus                  | transcription .      |
| 1 4 14 | 1          | AK019481  | 68260  |          |                                    | unknown              |
| 1.     | ١.         | NM_009584 |        | Zrf2     | nucleus                            | celi cycle           |
| 1      |            | NM_008925 |        | Prkcsh   | alpha-glucosidase complex;endopl   | signaling            |
| , also | ¥1         | NM_025301 | 27397  | Mrpl17   | mitochondrial large ribosomal su   | misc                 |
|        |            |           | 19654  | Rbm6     | spliceosome complex                | misc                 |
| 1      |            | NM_009197 | 20502  | Slc16a2  | Integral to plasma membrane        | transport            |
|        |            | AK020024  | 106504 | Stk38    |                                    | signaling?           |
| 1 1    | . ::       | AK014285  | 76965  |          |                                    | цпknown              |
|        |            | AK008800  | 70082  |          | membrane                           | unknown              |
| 1      |            | NM_009369 |        | Tgfbi    | extracellular matrix;extracellul   | cell adh             |
|        | S LLL      | BC013800  | 67063  |          |                                    | unknown              |
|        |            | NM_031493 |        | Xir5     | synaptonemal complex               | unknown              |
|        | H III      | NM_009746 | 12055  | Bc17c    | extrachromosomal circular DNA      | tumor related        |
|        |            |           |        |          |                                    |                      |

Figure 9 A

| BIOLOGICAL FUNCTION | unknown         | transcription                   | unknown   | unknown  | transcription                | signaling | signaling (secreted)         | apoptosis            | misc                            | tumor related   | unknown  | ctsk                               | protein degradation | protein degradation | trenslation? | unknown  | misc                | immune response | misc      | mlsc                         | unknown                       | transport            | signaling |
|---------------------|-----------------|---------------------------------|-----------|----------|------------------------------|-----------|------------------------------|----------------------|---------------------------------|-----------------|----------|------------------------------------|---------------------|---------------------|--------------|----------|---------------------|-----------------|-----------|------------------------------|-------------------------------|----------------------|-----------|
| LOCALIZATION        | nucleolus       | cytoplas mtanscription factor c |           |          | transcription factor complex | cytoplasm | extracellular space;membrane | integral to membrane | ribonucieoprotein complex;viral | Golgi apparatus |          | cytoplas mic microtubule; microtub |                     | basement membrane   |              |          | extracellular space |                 | nucleofus | mitochondrial outer membrane | extrachromosomal circular DNA | integral to membrane | myosin    |
| GENE                | Midn            | Tcfl4                           | Rad52b    |          | GIIS                         | S h3gl2   | Cntfr                        | Tnfrsf21             | S nrpd3                         | Rab10           |          | Clasp1                             | Usp12               | Timp3               |              |          |                     |                 |           | Mcsp                         |                               | Atp8a2               |           |
| TOCUS               | 29090           | 21428                           | 66299     | 69053    | 83396                        | 20404     | 12804                        | 94185                | 67332                           | 19325           | 77609    | 76707                              | 22217               | 21859               | 106200       | 69318    | 108902              | 78799           | 74157     | 17235                        | 68021                         | 50769                | 76131     |
| ACCESS LOCUS GENE   | NM_021565 59090 | NM_011550                       | NM_025654 | AK007485 | NM_031184                    | NM_019535 | NM_016673 12804              | NM_052975 94185      | NM_026095 67332                 | NM_016676 19325 | AK021166 | AJ288061                           | AK 006739           | NM_011595           | AK013044     | AK005730 | BC002191            | AK019605        | AK005044  | NM_008574                    | AK017801                      | NM_015803            | AK018060  |
| <b>უ</b> :შ         |                 |                                 |           | 1        |                              | L         |                              |                      |                                 |                 |          |                                    |                     |                     | -            |          |                     |                 | -         |                              |                               |                      |           |

82 BN2



Figure 9 B

| .3         | ACCESS    | LOCUS  | GENE                                  | LOCALIZATION                         | BIOLOGICAL FUNCTION        |
|------------|-----------|--------|---------------------------------------|--------------------------------------|----------------------------|
| 3,4        | AK019462  | 20643  | Snrpe                                 | small nucleolar ribonucleoprotei     | transcription              |
|            | AK011160  | 72117  | Mak3p                                 | spliceosome complex                  | transcription              |
|            | NM_010826 | 17540  | Mrvi1                                 | endoplasmic reticulum membrane;i     | transport                  |
|            | AK019863  | 77634  |                                       |                                      | translation                |
|            | MM_016806 | 53379  | Hnrpa2b1                              | nucleus;ribonucleoprotein comple     | transcription              |
|            | AK018132  | 74008  | <del></del>                           | lysosome                             | signaling                  |
|            | U61363    | 21888  | Tle4                                  | nucleus                              | transcription              |
|            | MM_013890 | 30050  | Fbxw2                                 | cytoplasm; extrachromosomal circu    | signaling                  |
|            | NM_017462 | 18975  | Polg                                  | gamma DNA polymerase complex         | cell cycle                 |
| 7          | NM_008857 | 18759  | Prkcl                                 | plasma membrane                      | signaling                  |
|            | NM_019724 | 17389  | Mmp16                                 | extracellular matrix;extracellul     | protein degradation        |
| 7.5        | NM_008602 | 17344  | Miz1                                  | nucleus;septin ring                  | transcription              |
| 13.        | NM_029292 | 75453  |                                       |                                      | unknown                    |
| 1          | AK017929  | 76007  | Zfp198                                | nucleus                              | transcription              |
|            | AK002704  | 68365  | Rab14                                 |                                      | signaling                  |
|            | NM_025282 | 17260  | Mef2c                                 | mediator complex                     | transcription,             |
|            | NM_019460 | 54650  | S fmbt1                               | chromatin                            | transcription              |
|            | AK009213  | 75573  | - O IIII DEI                          | CHOCHOUT                             | unknown                    |
|            | AK004323  | 66201  |                                       |                                      |                            |
|            | AK019803  | 78217  | ****                                  |                                      | unknown                    |
|            | NM_013535 | 14790  | Grcc10                                |                                      | unknown                    |
|            | AK008734  | 72349  | Dus p3                                |                                      | unknown<br>signaling       |
| 111        | NM_011012 | 18389  | Oprl                                  | integral to plasma membrane          |                            |
|            | NM_023336 | 67382  | Brd3                                  | Integral to membrane; nucleus        | signaling (receptor)       |
|            | M63245    | 11655  | Alas1                                 | anegra, as memorane, nacreus         | signating?                 |
|            | AK010433  | 66609  | Cryzi1                                |                                      | metabolism                 |
|            |           | 94186  | S trn3                                |                                      | metabolism                 |
|            | NM_008956 | 19205  | Ptbp1                                 | nucleolus;nucleoplas m               | signaling?                 |
|            | NM_026559 | 52700  | D11Ertd672e                           | nocieolos, nocieopias m              | transcription<br>transport |
|            | NM_011522 | 20974  | S yngr3                               | Integral to plasma membrane          |                            |
|            | AK005063  | 110351 | Rap1ga1                               | mograt o pastia tiemorane            | unknown                    |
|            | AK009308  | 246257 | р.за.                                 | cytoplasm                            | signaling                  |
|            | BC006063  | 75570  |                                       | Cympastii.                           | tumor related              |
| 1          | AK004664  | 73830  |                                       |                                      | unknown                    |
|            | BC004648  | 74737  | · · · · · · · · · · · · · · · · · · · |                                      | unknown                    |
|            | D86949    | 18845  | Plxna2                                | extracellular space;integral to      | unknown                    |
|            | AK004943  | 66627  | 7 MIGE                                | endoplasmic reticulum                | signaling                  |
| diappa     | NM_029716 |        | Chn1                                  | cytoplasm                            | unknown                    |
|            | AK006525  | 70375  | O I II I                              | Суюрьзи                              | signaling                  |
| -1         | NM_009084 |        | R pl37a                               | cytosolic ribosome (sensu Eukary     | misc                       |
|            | AK006959  | 74279  | Крюла                                 | cyasolic riscsollia (selisu Edialy   | translation                |
|            |           | 74275  | <del></del>                           |                                      | unknown                    |
| 777        |           | 71099  |                                       | microtubule cytoskeleton             | unknown                    |
| ,          | NM_019836 |        |                                       | extracellular space; integral to     | signaling ?                |
| .05        | NM_025633 |        | Metapi1                               | Integral to plasma membrane          | unknown                    |
| era<br>Era | AK007339  | 99730  | Taf13                                 | transcription factor TFIID compl     | protein degradation        |
|            | NM_021371 |        | Caln1                                 | varistripuori racus: 17 rus compi    | transcription              |
| 5312       | NM_019754 |        | Tagin3                                | cytoskeleton                         | signaling                  |
| m          | NM_012030 |        | S lc9a3r1                             |                                      | ctsk                       |
|            | U89513    | 73647  | Capn9                                 | actin cytos keleton; a pica I plasma | ctsk                       |
|            | NM_007997 |        |                                       | intracellular                        | misc                       |
|            | AK005095  | 69757  | Fdxr<br>Leng1                         | mitochondrion                        | metabolism                 |
|            | AB035322  | 108897 | Leng i                                | extracellular space                  | unknown                    |
| -          | ADUSSSZZ  | 100091 |                                       | centriole                            | unknown                    |

| Figure 10 A | BIOLOGICAL FUNCTION | metabolism | transcription | unknown       | transcription  | tumor related (suppressor) | ctsk                           | есш      | metabolism | metabolism                        | transcription                    | signaling | misc      | ceil cycle                 | ion channel                     | unknown  | unknown  | metabolism | unknown  | transport            | transcription ?                  | transcription | unknown  | misc                          | cell cycle                         | signaling | signaling (receptor) | lipid metabolism               | signaling (os mos is response)   | вст                 | signaling (receptor)        | translation | unknown  | cell cycle |            |
|-------------|---------------------|------------|---------------|---------------|----------------|----------------------------|--------------------------------|----------|------------|-----------------------------------|----------------------------------|-----------|-----------|----------------------------|---------------------------------|----------|----------|------------|----------|----------------------|----------------------------------|---------------|----------|-------------------------------|------------------------------------|-----------|----------------------|--------------------------------|----------------------------------|---------------------|-----------------------------|-------------|----------|------------|------------|
|             | LOCALIZATION        |            |               | mitochondrion | nuclear matrix | cytoplasm                  | microtubule associated complex | collagen |            | endoplas mic redculum; integral t | DNA-directed RNA polymerase II-, |           | nucleolus | anaphase-promoting complex | voltage-gated potasslum channel |          |          | cytoplasm  |          | peroxisomai membrane | cytoplasm;mediator complex;ribon | nucleus       |          | extrachromosomal circular DNA | centros ome; condensed chromosome; | cytoplasm | integral to membrane | extracellular space; microsome | protein serine-threonine phospha | extracellular space | integral to plasma membrane | cytoplasm   |          | uncjens    |            |
|             | GENE                | Osbpf7     | Prdm4         | Keg1          | Tcerg1         | Serpinb5                   | Mtap6                          | Col16a1  |            | Hsd17b7                           | Polr2i                           |           | Tcoff     | Anapc11                    | Shkbp1                          |          |          | Gamt       |          | Pex5                 | Rbm14                            | Pias1         |          |                               | H2afy                              | Tank      | Tbxa2r               | Aadac                          |                                  | Prg3                | Ptch                        |             |          | Sesn3      |            |
|             | rocus               | 71240      | 72843         | 64697         | 56070          | 20724                      | 17760                          | 107581   | 75425      | 15490                             | 69920                            | 109225    | 21453     | 66156                      | 192192                          | 75275    | 72215    | 14431      | 68472    | 19305                | 56275                            | 56469         | 75645    | 69824                         | 26914                              | 21353     | 21390                | 67758                          | 67515                            | 53856               | 19206                       | 99349       | 232288   | 75747      |            |
|             | ACCESS              | AK017095   | AK013393      | AK002360      | NM_019512      | NM_009257                  | NM_010837                      | AK012212 | AF332067   | NM_010476                         | AK012635                         | AF237917  | NM_011552 |                            | AF246218                        | AK016214 | AK005619 | NM 010255  | AK003201 | MN 008995            | AK004928                         | NM 019663     | AK005864 | AK008008                      | AB071988                           | NM 011529 | NM 009325            | NM 023383                      | AK013464                         | NM 016914           | NM_008957                   | AK006521    | AF327857 | AK017464   |            |
| Π           | 0.3                 |            |               |               |                |                            | ļ,                             |          | 1          | 1                                 |                                  |           |           |                            |                                 |          |          |            |          |                      | Í                                |               |          |                               |                                    |           |                      |                                |                                  |                     |                             |             |          |            | BNS<br>BNS |



Figure 10 B

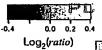
| 3        |              | ACCESS                | Locus            | GENE                                  | LOCALIZATION                                  | BIOLOGICAL FUNCTION  |
|----------|--------------|-----------------------|------------------|---------------------------------------|---|----------------------|
| 114      | Α            | K003850               | 66151            |                                       | extracellular matrix                          | ecm                  |
|          | A            | K021190               | 77644            |                                       |   | unknown              |
|          | A            | \F190665              | 56873            | Lmbr1                                 |   | unknown              |
|          | _            | M_020004              | 14534            | Gcn5I2                                | histone acetyltransferase comple              | transcription        |
| AT IT    | A            | K009937               | 71941            |                                       |   | transcription?       |
|          | ١            | VM_025590             | 329910           | Thea                                  | cytoplasm                                     | lipid metabolism     |
|          | P            | AK020702              | 78428            |                                       |   | unknown              |
|          | V            | VM_018776             | 54394            | Crlf3                                 | membrane                                      | signaling (receptor) |
|          | ١            | VM_009536             | 22627            | Ywhae                                 | · · · · · · · · · · · · · · · · · · ·         | signaling            |
| 3        | 1            | NM_021793             | 60455            | Tmem8                                 | extracellular space;integral to               | cell adh             |
| 113      | 1            | AK015007              | 77048            |                                       | cytoskeleton                                  | transport            |
|          | E            | BC005485              | 99543            | Olfml3                                | extracellular space                           | ecm                  |
|          |              | NM_009476             | 22269            | Upk2                                  | endoplasmic reticulum;extracellu              | tumor related        |
|          | - 1          | NM_007966             | 14028            | Evx1                                  | transcription factor complex                  | transcription        |
|          | ): I         | NM_009425             | 22035            | Tnfsf10                               | extracellular space; integral to              | apoptosis            |
|          |              | NM_008229             | 15182            | Hdac2                                 | cytoplasm;histone deacetylase co              | transcription        |
|          |              | NM_021550             | 59048            |                                       | integral to membrane                          | unknown              |
| 7.3      | l            | NM_011292             | 20005            | Rpl9                                  | cytosolic ribosome (sensu Eukary              | translation          |
|          | ] [          | NM_022320             | 64095            | Gpr35                                 | integral to membrane                          | signaling (receptor) |
| 32.7     |              | NM_013750             | 27280            | Phlda3                                | Integral to membrane                          | unknown              |
|          |              | AK005536              | 67883            | Uxs1                                  | integral to membrane                          | misc                 |
|          |              | AK003676              | 68581            |                                       | Golgi apparatus;integral to plas              | traffic              |
|          | 14.          | NM_013596             | 17203            | Mc5r                                  | integral to membrane                          | signaling            |
|          |              | AK014763              | 75769            |                                       | integral to membrane                          | unknown              |
|          |              | AK003413              | 68001            |                                       | ribosome                                      | unknown              |
|          |              | NM_026428             | 67880            | Dexr                                  | brush border;microvillus                      | meta bolis m         |
|          |              | AK012240              | 66399            |                                       | mitochondrion                                 | translation          |
|          |              | NM_021567             | 59092            | Pcbp4                                 | cytoplasm;nucleus;ribonucleoprot              | transcription ·      |
|          | and the late | AF276975              | 192200           | Swam2                                 | extracellular space                           | me ta bolis m        |
| -        | 73           | NM_030677             | 14776            | Gpx2                                  | cytosol                                       | mlsc                 |
| 5,95302  |              | NM_023450             |                  |                                       | Integral to membrane                          | unknown              |
|          |              | NM_008998             |                  | Rab17                                 | early endosome                                | signaling            |
|          |              | NM_018884             |                  | Pdzrn3                                | peroxisome                                    | signaling            |
|          |              | AK009134              | 75572            | Acyp2                                 | extrachromosomal circular DNA                 | meta bolis m         |
| إنتيا    |              | U14172                | 13669            | Eif3s10                               |   | translation          |
| -        |              | AK019664              | 78801            | · · · · · · · · · · · · · · · · · · · |   | signaling?           |
| ين نونو  |              | AF332051              | 104112           | Acly                                  | Intracellular                                 | me ta bolis m        |
| عدره ع   |              | NM_031184             |                  | G 115                                 | transcription factor complex                  | transcription        |
| 212000   | Jensey.      | NM_008663             |                  | Myo7a                                 | myosin  | ctsk                 |
| SMITH OF |              | NM_033616             |                  | Csprs                                 | nucleus                                       | signaling            |
|          |              | AK017848              | 74329            | A101                                  |   | unknown              |
|          |              | NM_02621              |                  | Apg12I                                | cytoplasm                                     | protein degradation  |
|          |              | NM_01972              |                  | Tie2                                  | nucleus                                       | transcription        |
|          |              | AK003154              | 68420            | <del>+</del>                          |   | unknown              |
|          | ķ            | NM_00939              |                  | Tnfaip6                               | extracellular space                           | cell adh             |
|          |              | AK017158              | 75965            |                                       | nucleus                                       | unknown              |
|          | ٠            | AK018937              | 78636            |                                       | Internal to the second                        | unknown              |
|          | •            | NM_02586              |                  | E off 2                               | integral to membrane                          | unknown              |
|          | ٠            | NM_01020              |                  | Fgf13                                 | extracellular space                           | signaling            |
|          | į.,          | NM_02171              |                  | Sic18a3                               | Integral to plasma membrane                   | transport            |
|          | g<br>g       | AK 016267<br>NM_00808 | 65103            | Arl6ip6                               | integral to membrane                          | unknown              |
| -        | <b>!</b>     | AK008791              | 3 14432<br>74245 | Gap43                                 | axon;membrane<br>extracellular space;lysosome | signaling            |
| نستنا    | ٠            |                       | 74243            |                                       | exuacential space, lysosome                   | protein degradation  |
| (A)      | 10           |                       |                  |                                       |   |                      |

| Figure 11 A | ACCESS LOCUS GENE | LOCALIZATION | BIOLOGICAL FUNCTION | BIOLOGICAL FUNCTION | M. 008254 15356 | Hmgcl | extracellular space;mitochondrio | misc | mimune response | misc | mis

0.4

0.0 0.2 Log<sub>2</sub>(ratio)

B2 BN2



#### Figure 11 B

|      |  |           |        |  | •                                  | · ·                      |
|------|--|-----------|--------|--|------------------------------------|--------------------------|
| 4    |  | ACCESS    | LOCUS  | GENE                                   | LOCALIZATION                       | BIOLOGICAL FUNCTION      |
| 1    |  | AK019621  | 78796  |  |                                    | Transcription            |
| -54  |  | NM_023670 | 140488 | lgf2bp3                                | cytoplasm                          | growth factor            |
|      | $\vdash$   | NM_008812 | 18600  | Padi2                                  | extracellular                      |                          |
|      |  | NM_011242 | 19395  | Rasgrp2                                | cytosol;nucleosome;plasma membra   | translation              |
| -    | <del>                                     </del> | AK015947  | 68195  | Rnaset2                                | Cybosol, nucleosome, plasma membra | signaling                |
|      |  | AK011446  | 70348  | Kilasetz                               |                                    | metabolism               |
| -    | -  |           | 12317  | Cala                                   |                                    | unknown                  |
|      | Н  | NM_007591 |        | Calr                                   | endoplasmic reticulum lumen;extr   | cell adhesion            |
| -    |  | NM_022030 | 64051  | Sv2a                                   | integral to membrane;synaptic ve   | transport                |
| -    |  | AK018331  | 76205  | Stard3nl                               | Integral to membrane               | unknown                  |
| -    | -  | AF281870  | 64009  | Syne1                                  | nuclear membrane;sarcomere         | ctsk                     |
| -    | <u>                                     </u>     | AK009114  | 71885  |  |                                    | cell adh ?               |
| نيا  |  | NM_025367 | 20698  | S phk1                                 | soluble fraction                   | signaling                |
|      |  | NM_023485 | 68828  | Sync                                   | Z disc;cytosol;intermediate fila   | ctsk                     |
| 1.0  |  | AK020492  | 77305  |  |                                    | transcription            |
| ž    |  | NM_019477 | 50790  | Faci4                                  | cytoplasm;integral to membrane     | metabolism               |
| 3.1  |  | NM_026434 | 67889  |  | viral nucleocapsid                 | unknown                  |
|      |  | NM_008064 | 14387  | Gaa                                    | lysosome                           | misc                     |
| 139  |  | NM_016782 | 53321  | Cntnap1                                | extracellular space;integral to    | cell adh                 |
|      |  | AK003179  | 66101  | D4Wsu43e                               | spliceosome complex                | transcription            |
| 2    |  | AK019547  |        |  | ·                                  | unknown                  |
|      |  | AK009014  | 69541  | ······································ | extracellular space                | unknown                  |
|      |  | NM_016717 | 50880  | Scly                                   | mitochondrial inner membrane       | metabolism               |
|      |  | NM_028333 | 72713  | Angptl1                                | extracellular space                | growth factor            |
|      |  | NM_013541 | 14870  | Gstp2                                  | cytoplasm                          | metabolism               |
|      |  | X76850    | 17164  | Mapkapk2                               |                                    | signaling                |
|      |  | BC017138  | 109168 |  |                                    | Immune response ?        |
|      |  | NM_019643 | 56306  | Тега                                   |                                    | Unknown                  |
|      |  | NM_008791 | 18546  | Pcp4                                   |                                    | signaling                |
|      |  | NM_010891 | 18000  | sep-02                                 | contractile ring                   | cell cycle               |
|      |  | AK021099  | 77462  |  |                                    | unknown                  |
|      |  | AK014942  | 76856  |  | Integral to membrane               | transport                |
|      |  | NM_021548 | 59046  | Arpp19                                 | cytoplasm                          | transport?               |
| 벫    |  | AK009267  | 28019  | Ing4                                   |                                    | transcription            |
|      |  | NM_016665 | 20892  | Stra13                                 |                                    | transcription            |
|      |  | AK013427  | 104884 |  |                                    | signaling                |
|      |  | NM_007538 | 12057  | Opn1sw                                 | integral to membrane;photorecept   | signating                |
|      |  | NM_010010 | 13116  | Cyp46a1                                | endoplasmic reticulum;extracellu   | transport                |
|      |  | NM_008421 | 16502  | Konc1                                  | voltage-gated potassium channel    | lon channel              |
|      |  | NM_008016 | 14210  | Fin15                                  |                                    | misc                     |
| 133  |  | NM_011196 | 19218  | Ptger3                                 | integral to membrane;plasma memb   | signaling (receptor)     |
|      |  | NM_010259 | 14468  | Gbp1                                   | cytosol                            | Immune response          |
|      |  | NM_031162 | 12503  | C d3z                                  | integral to membrane;plasma memb   | Immune response          |
|      |  | AF276974  | 192201 |  | extracellular space                | unknown                  |
|      |  | AK002667  | 67899  |  | cytoplasm                          | unknown                  |
|      |  | AF369902  | 68291  | Mto1                                   | mitochondrion                      | metabolism               |
|      |  | NM_023814 |        | Tbx18                                  | microtubule; nucleus               | transcription            |
|      |  | AK015803  | 225980 |  |                                    | unknown                  |
|      |  | AK004550  | 71707  |  | Integral to membrane               | misc                     |
|      |  | AK002360  | 64697  | Keg1                                   | mitochondrion                      | unknown                  |
| _    |  | MM_023266 |        | Zfp120                                 | nucleus                            | unknown                  |
|      |  | BC 003255 | 228355 | Madd                                   | plasma membrane                    | apoptosis                |
| ſ    |  | AK006487  | 75623  |  |                                    | unknown                  |
|      | 1  | NM_011423 | 20601  | S mr3                                  | extracellular                      | growth factor (secreted) |
|      |  | NM_008125 |        | GJb2                                   | connexon complex;integral to mem   | signating (receptor)     |
|      |  | AK017484  | 67023  |  | mitochondriai matrix               | transcription            |
| 1.45 | will draw  | AK002842  | 68386  |  |                                    | unknown                  |
|      |  | NM_009555 |        | Zfp40                                  | transcription factor complex       | trans port               |
|      |  | AK015309  | 75792  |  |                                    | unknown                  |
| 231  |  | NM_007567 |        | Bsn                                    | cytoskeleton;integral to membran   | signaling                |
| 150  |  | NM_021354 | 13495  | Drg2                                   | mitochondrion                      | unknown                  |
|      |  | AK016584  | 72230  |  | nucleus                            | unknown                  |
|      |  | AK017149  | 75964  |  |                                    | unknown                  |
|      |  | MM_008329 | 15951  | lfi16                                  | nucleos ome; nucleus               | immune response          |
|      | <b>~</b>   |           |        |  |                                    |                          |



| 4        |                        | ACCESS                | Locus            | GENE            | LOCALIZATION   | PIOLOGICAL FUNDAMENT                      |
|----------|------------------------|-----------------------|------------------|-----------------|--|---|
|          | 4                      | NM_009860             | 12532            | Cdc25c          | mitotic chromosome; nucleus  | BIOLOGICAL FUNCTION                       |
|          |                        | AF 369902             | 68291            | Mto1            | mitochondrion  | cell cycle                                |
|          |                        | NM_008729             | 18163            | Catnd2          | cytoskeleton   | metabolism                                |
| <i>:</i> | 100                    | NM_020567             | 57441            | Gmnn            | nucleus  | cell adhesion                             |
|          |                        | NM_009426             | 22044            | Trh             | extracellular space; soluble frac                                    | growth factor (secreted)                  |
|          | 14                     | NM_010389             | 15002            | Н2-ОЬ           | extracellular space; integral to                                     | Immune response (receptor)                |
|          |                        | L21027                | 236539           | Phgdh           |  | metabolism                                |
| 1        |                        | AK008083              | 72041            |                 |  | unknown                                   |
|          |                        | NM_008451             | 16594            | Klc2            | kinesin complex  | ctsk                                      |
|          |                        | AK003996              | 68668            |                 | extracellular space  | protein degradation                       |
| $\vdash$ | ╂—                     | NM_008106             | 14539            | Opn1mw          | Integral to plasma membrane;phot                                     | signaling (receptor)                      |
| -        | 10.70                  | AK008125              | 228880           |                 |  | unknown                                   |
| <u> </u> | 2                      | NM_019957             | 56629            | Dnase2b         | cytopiasm;extracellular space  | misc                                      |
| 211      |                        | AK009243              | 69534<br>68115   | Avpi1           |  | signaling                                 |
|          | 1                      | AK007831<br>NM_008571 | 17225            | Mant2           |  | unknown                                   |
| -        |                        | AK011565              | 69904            | Mcpt2           | cytoplasm;extracellular space  | protein degradation                       |
|          |                        | NM_011835             | 23924            | Katna1          | extected atomilial postiliance                                       | unknown                                   |
|          |                        | AK010396              | 71986            | Ddx28           | cytoskeleton;lipid particle;nucl<br>extracellular space;ribulose bis | cell cycle?                               |
| 楚        | 1112                   | NM_019695             | 56513            | Pard6a          | tight junction   | unknown                                   |
|          |                        | AK011290              | 67763            | , araba         | extracellular space  | cell cycle                                |
|          |                        | NM_013542             | 14939            | Gzmb            | cytoplasm;extracellular space  | metabolism<br>protein degradation         |
|          |                        | NM_011617             | 21948            | Tnfsf7          | Integral to membrane   | tumor related                             |
|          |                        | AK006993              | 73486            |                 | ribosome   | unknown                                   |
|          |                        | NM_026417             | 67864            |                 | Integral to membrane   | unknown                                   |
|          |                        | NM_016981             | 20544            | Slc9a1          | basolateral plasma membrane;extr                                     | transport                                 |
|          | Ш                      | NM_015819             | 50786            | Hs6st2          | extracellular space  | ecm                                       |
|          |                        | AK004657              | 74111            |                 |  | unknown                                   |
|          |                        | NM_016875             | 53422            | Ybx2            | cytoplasm  | translation                               |
|          |                        | 711101000             | 170707           | Usp31           |  | protein degradation                       |
|          |                        | NM_021380             | 58181            | 1120            | extracellular space  | immune response                           |
|          |                        | NM_023805             | 76257            | S tc38a3        | integral to plasma membrane  | transport                                 |
|          | 4                      | AK004563              | 70504            |                 |  | unknown                                   |
| 1        | -                      | NM_028564             | 73534            |                 |  | unknown                                   |
| 16       | L                      | AK020727<br>AK015972  | 77754<br>75137   | <del></del>     |  | mlsc                                      |
| 19       | 1                      | AK004913              | 74158            | ····            | cytoplasm  | unknown                                   |
|          | es march               | NM_025561             | 74130            |                 | ······································                               | unknown                                   |
| 1        |                        | NM_026418             | 67865            | Rgs10           |  | unknown                                   |
| 14,      | 1 441                  | NM_016800             | 53612            | Vti1b           | Golgi apparatus;integral to memb                                     | signaling                                 |
|          | 1                      | AK019514              | 78104            |                 | g. append ad // magrar to memb                                       | traffic<br>unknown                        |
|          |                        | NM_031180             | 83379            |                 | integral to membrane   | metabolism                                |
|          | J.                     | AK005887              | 69354            | Slc38a4         | Integral to membrane   | transport                                 |
|          | 90                     | NM_013615             | 18286            | Odf2            | myosin   | ctsk                                      |
|          |                        | AK007653              | 52443            | D4E rtd786e     | ribosome   | translation                               |
|          |                        | AK006009              | 75553            |                 |  | unknown                                   |
|          |                        | AK019938              | 321015           |                 |  | unknown                                   |
|          |                        | AK016916              | 109242           | Kif24           | mitochondrion  | misc                                      |
| 1        | J. Fr                  | NM_008902             | 19011            | Pp11r           | extracellular space  | cell adh                                  |
|          |                        | NM_008756             | 18260            | Ocin            | integral to membrane;tight junct                                     | cell adh                                  |
| 1.00     |                        |                       | 66039            | D14Ertd449e     |  | unknown                                   |
|          | MI (584)<br>1811 (548) | BC017636              | 93687            | Csnk1a1         |  | signaling                                 |
| 111      | program                | BC002230              | 110796<br>217827 | S dccag33       |  | transcription                             |
| ĺ:       |                        | NM_031201             | 22122            | BC002230        | intracellular  | unknown                                   |
| 3        | H                      |                       |                  | Tsta3<br>Crisp2 | extrachromosomal circular DNA extracellular space                    | metabolism                                |
| 1        |                        | NM_009086             |                  | Rpo1-2          | DNA-directed RNA polymerase I co                                     | unknown                                   |
| 475      |                        | AK007777              | 83490            | Pik3ap1         | cytoplasm;nucleus;plasma membran                                     | transcription                             |
| i com    |                        | NM_010599             |                  | Kcnab3          | cytoplasm;Integral to plasma mem                                     | signaling                                 |
| -        |                        | NM_021332             | 14652            | Glp1r           | extracellular space; integral to                                     | ion channel                               |
|          |                        | NM_007429             | 11609            | Agtr2           | Integral to plasma membrane  | signaling (receptor) signaling (receptor) |
|          |                        | M12289                | 17885            | Myh8            | myosin; striated muscle thick fil                                    | ctsk                                      |
|          |                        | NM_008317             | 15586            | Hyal1           |  | metabolism                                |
| £.       |                        | AK017530              | 70502            |                 |  | unknown                                   |
| E.       | 課徒                     | AK002360              | 64697            | Keg1            | mitochondrion  | unknown                                   |
|          |                        |                       |                  |                 |  |   |

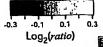


Figure 13

|       | _                                  |        |         |                                   |                            |
|-------|------------------------------------|--------|---------|-----------------------------------|----------------------------|
|       | ACCESS                             | LOCUS  | GENE    | LOCALIZATION                      | BIOLOGICAL FUNCTION        |
|       | NM_019662<br>AK004939<br>NM_031182 | 56437  | Rrad    | membrane                          | signaling                  |
|       | AK004939                           | 71753  | Tmprss6 | integral to membrane;plasma memb  | protein degradation        |
|       | NM_031182                          | 83383  | Tfap4   | membrane                          | transcription              |
|       | NM_026177                          | 67467  |         |                                   | unknown                    |
|       | NM_013589                          | 16997  | Ltbp2   | extracellular matrix              | ecm                        |
|       | AK009180                           | 67484  |         | integral to membrane;intracellul  | misc                       |
|       | BC005518                           | 76867  |         | extracellular space; integral to  | unknown                    |
|       | NM_011936                          | 26383  | Fto     |                                   | unknown                    |
|       | NM_008958                          | 19207  | Ptch2   | Integral to membrane              | signaling (receptor)       |
|       | NM_030684                          | 94094  | Trim34  | cytoplasm                         | unknown                    |
|       | AK012971                           | 74201  |         | cytoplasm                         | signaling?                 |
| mm;   | AK002842                           | 68386  |         |                                   | unknown                    |
|       | NM_017462                          | 18975  | Polg    | gamma DNA polymerase complex      | cell cycle                 |
|       | AK005167                           | 76686  |         | •                                 | unnown                     |
| 1161  | NM_009779                          | 12267  | C3ar1   | integral to membrane              | immune response            |
|       | NM_008663                          | 17921  | Муо7а   | myosin                            | ctsk                       |
|       | BC003284                           | 73828  | Wdr21   | heterotrimeric G-protein complex  | signaling                  |
|       | AK017550                           | 59032  |         | membrane                          | cell cycle ?               |
|       | AK020090                           | 68176  |         |                                   | transcription              |
|       | AK005431                           | 67009  |         | kinesin complex                   | unknown                    |
|       | NM_008877                          | 18815  | Pig     | extracellular space               | apoptosis                  |
|       | AK005063                           | 110351 | Rap1ga1 |                                   | signaling                  |
|       | AF158744                           | 67310  | Pripc2  | extracellular space               | growth factor (secreted)   |
| 1     | X13721                             | 15416  | Hoxb8   | transcription factor complex      | transcription              |
|       | NM_009680                          | 11774  | Ap3b1   | Golgi trans face                  | transport                  |
| 1.2   | NM_007628                          | 12427  | Ccna1   | cytosol;nucleus                   | cell cycle                 |
|       | NM_008249                          | 15278  | Tfb2m   | extracellular space; nucleolus    | tra nscription             |
|       | NM_029292                          | 75453  |         |                                   | unknown                    |
|       | NM_019435                          | 104130 | Np15    | integral to membrane; mitochondri | unknown                    |
| 45° 3 | AK003549                           | 68499  | Mrpl53  |                                   | translation                |
|       | AK013927                           | 73099  |         |                                   | unknown                    |
|       | NM_008126                          | 14620  | Gjb3    | connexon complex;Integral to mem  | signaling (receptor)       |
|       | AK019531                           | 78902  |         |                                   | unknown                    |
|       | BC 004759                          | 171095 | 1117rc  | integral to plasma membrane       | immune response (receptor) |
|       | NM_008372                          | 16197  | 117r    | extracellular space; integral to  | Immune response (receptor) |
|       | NM_028494                          | 73297  |         |                                   | unknown                    |
| 111   | AK004342                           | 66478  |         |                                   | unknown                    |
| 1     | NM_026260                          |        |         | cytoplas m; extracellular space   | unknown                    |
|       | NM_019432                          | 170706 | Pr1     | integral to membrane              | ion channel                |
|       | L34676                             | 11784  | Apba2   |                                   | signaling                  |
|       | NM_026183                          |        |         | integral to membrane              | unknown                    |
| 144   | NM_00822                           | 15159  | Hccs    | mitochondrion                     | meta bolis m               |
|       |                                    |        |         |                                   |                            |

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|                |           |        |         |                                    | Figure 14            |
|----------------|-----------|--------|---------|------------------------------------|----------------------|
|                | ACCESS    | SUSOL  | GENE    | LOCALIZATION                       | BIOLOGICAL FUNCTION  |
|                | AK018560  | 67556  | Pigm    |                                    | metabolism?          |
|                | AK 007485 | 69053  |         |                                    | unknown              |
| <u>.</u>       | NM 027205 | ı      |         | peroxisome                         | transport?           |
|                | BC018468  | I      |         |                                    | unknown              |
|                | AK015642  | 75036  |         |                                    | mlsc (secreted)      |
| Total Comments | NM 009983 | 1      | Ctsd    | extracellular space;lysosome       | protein degradation  |
|                | NM 008060 | 1      | G2an    | aipha-glucos idas e complex endopl | metabolism           |
|                | D13903    | 1      | Ptprd   | integral to membrane;plasma memb   | signaling (receptor) |
| -:             | AK003420  | 68567  | Cgref1  | extracellular space                | cell cycle ?         |
|                | NM_018819 | 55951  | Brp441  |                                    | unknown              |
|                | AF326960  | 21380  | Tbx1    | microtubule; nucleus               | transcription        |
|                | BC002298  | 19283  | Ptprz1  | extracellular matrix;extracellul   | signaling (receptor) |
|                | AK021033  | 77219  |         | cytoplasm                          | metabolism ?         |
|                | AK013856  | 23938  | Map2k5  | extracellubr                       | signaling            |
|                | NM 010471 | 15444  | Нрса    |                                    | unknown              |
|                | AK014285  | 76965  |         |                                    | นกkกฮพก              |
|                | NM 016717 | 50880  | Scly    | mitochondrial inner membrane       | metabolism           |
| -              | NM 013638 | 19120  | Prm3    | nucleosome; nucleus                | celi cycle           |
|                | AK013924  | 12301  | Cacybp  | cytoplasm:nucleus                  | unknown              |
| <u></u>        | NM 009427 | 22057  | Tob1    | cytopiasm; extracellular           | signaling            |
| -              | NM 007399 | 11487  | Adam10  | extracellular matrix;extracellul   | protein degradation  |
| -              | AK020653  | 78558  |         | extracellular                      | signaling            |
| -              | AK 004655 | 74107  |         |                                    | translation          |
| 1              | AK 003256 | 74320  |         |                                    | misc                 |
| -              | NM 023596 | 71279  | S1c29a3 | integral to membrane               | transport            |
|                | NM_019409 | 18377  | Отд     | extracellular space;integral to    | signaling            |
| -              | AK020700  | 77763  |         |                                    | ctsk                 |
| :<br>!         | AK005205  | 67129  |         |                                    | unknown              |
| -              | NM_021547 | 59045  | Stard3  | integral to membrane;late endoso   | metabolism           |
| <b>}</b>       | BC004635  | 102607 | Snx19   |                                    | unknown              |
| -              | NM_025386 | 66153  | Fbxo36  |                                    | transcription ?      |
|                | AK017138  | 74471  |         |                                    | unknown              |
| -              | NM_016910 | 53892  | Ppm1d   | protein serine-threonine phospha   | signaling            |
|                | AK013267  | 72747  |         | integral to membrane               | unknown              |

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| Figure 15 | BIOLOGICAL FUNCTION | cell adh (receptor)             |
|-----------|---------------------|---------------------------------|
|           | LOCALIZATION        | extracellular space;Integral to |
|           | GENE                | Sd6                             |
|           | LOCUS               | 12511                           |
|           | ACCESS LOCUS GENE   | M_009852 12511 Cd6              |

|     | ACCESS    | LOCUS  | GENE      | LOCALIZATION                       | BIOLOGICAL FUNCTION  |
|-----|-----------|--------|-----------|------------------------------------|----------------------|
|     | NM_009852 | 12511  | Cd6       | extracellular space;Integraf to    | cell adh (receptor)  |
|     | AK003642  | 68618  |           | lysosome                           | metabolism ?         |
|     | AF228925  | 72088  | Ush1c     | cilium                             | signaling            |
|     | NM_024199 | 67337  | Cstf      | mRNA cleavage stimulating factor   | transcription        |
|     | AK012842  | 72686  |           |                                    | unknown              |
|     | NM_008167 | 14804  | Grid2     | integral to membrane;synaptosome   | lon channel          |
|     | NM_019458 | 54624  |           | nucleosome                         | unknown              |
|     | NM_016658 | 14430  | Galt      | cytoplasm                          | metabolism           |
| ~~~ | NM_024474 | 140709 | Col26a1   | Golgi apparatus; endoplas mic reti | ест                  |
| -   | AK003651  | 14000  | Etohi2    |                                    | translation          |
| _   | AB023957  | 170713 | AB023957  |                                    | unknown              |
| -   | NM_025561 |        |           |                                    | unknown              |
| -   | NM_025419 | 66202  |           | cytopiasm                          | unknown              |
| -   | AK019481  | 68260  |           |                                    | unknown              |
| -   | NM_009047 | 19700  | Rem       | тетргапе                           | signaling            |
| -   | BC003842  | 97112  | C87860    | extracellular                      | transport            |
| -   | BC005598  | 98221  | Ga17      | s ignalosome complex               | protein degradation  |
|     | NM_016859 | 53414  | Bysl      | cytoplasm                          | cell adh             |
| A   | AK007327  | 66144  | Atp6v1f   | hydrogen-transporting ATPase V1    | metabolism           |
|     | NM_013614 | 18263  | Odc       | mitochondrial inner membrane       | misc                 |
|     | AK005852  | 71838  | Phf7      |                                    | ипкломп              |
|     | AK005479  | 52076  | D4Ertd89e | nucleosome;nucleus                 | mlsc                 |
| 1:_ | NM_030558 | 80733  | Car15     |                                    | metabolism           |
|     | NM_013559 | 15505  | Hsp105    | cytoplasm                          | translation          |
| 二   | NM_023133 | 20085  | Rps19     | cytosolic ribosome (sensu Eukary   | translation          |
| ,   | NM_021385 | 58186  | Rad18     | nucleus                            | cell cycle           |
| _   | NM_023633 | 71952  |           | cytosol                            | unknown              |
|     | NM_021472 | 58809  | Rnase4    |                                    | mlsc                 |
| _   | NM_008742 | 18205  | NE3       | extracellular space                | signaling (secreted) |
|     | NM_011838 | 23936  | Lynx1     | extracellular space;intagral to    | Signaling (receptor) |
| -   | NM_011791 | 23808  | Ash2l     |                                    | transcription        |
| -   | AK013800  | 73053  |           |                                    | unknown              |
| -   | NM_007930 | 13803  | Enc1      | cytoskeleton                       | ctsk                 |
|     | AK014487  | 257635 | Sdsi      |                                    | meta bolis m         |
|     |           |        |           |                                    |                      |

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| Figure 16 | BIOLOGICAL FUNCTION | transcription                    | traffic  | translation        | signaling                        | tumor related     | misc      | protein degradation | signaling           | traffic               | signaling (receptor)        | unknown              | signaling                    | transport                       | signaling (receptor)             | metabolism | cell adh        | signaling | tumor related       | transcription                | tumor related | unknown | unknown | signaling (receptor)            | signaling                       | metabolism      |
|-----------|---------------------|----------------------------------|----------|--------------------|----------------------------------|-------------------|-----------|---------------------|---------------------|-----------------------|-----------------------------|----------------------|------------------------------|---------------------------------|----------------------------------|------------|-----------------|-----------|---------------------|------------------------------|---------------|---------|---------|---------------------------------|---------------------------------|-----------------|
|           | LOCALIZATION        | transcription factor TFIIH compl |          | nucleolus;ribosome | connexon complex;Integral to mem | non-muscle myosin | nucleus   |                     | spliceosome complex | endoplasmic reticulum | integral to plasma membrane | integral to membrane | extracellular space;membrane | endoplasmic redculum membrane;i | extracellular matrix;extracellul |            |                 | ribosome  | extracellular space | transcription factor complex |               |         |         | extracellular space;integraf to | extracellular space;Integral to |                 |
|           | GENE                | G#2h2                            | Gga2     | R pl3              | 9q[9                             |                   | S marca 5 | Usp15               | Rheb                | Mttp                  | Gabra2                      |                      |                              | Mrvi1                           | Gpc1                             |            | Стаг            | Acbd6     | Lrpap1              | Uffi                         | Stard10       |         |         | Grin2d                          | Gpr27                           | Sepr            |
|           | rocus               | 23894                            | 74105    | 27367              | 14623                            | 68953             | 93762     | 14479               | 19744               | 17777                 | 14395                       | 74770                | 69721                        | 17540                           | 14733                            | 75425      | 57358           | 72482     | 16976               | 22286                        | 56018         |         | 68647   | 14814                           | 14761                           | 27361           |
|           | ACCESS LOCUS GENE   | NM 022011                        | AK004632 | NM 013762          | NM_008128 14623                  | AK005267          | AF375046  | AK014891            | NM_053075 19744     | NM_008642 17777       | NM_008066 14395             | AK003605             | اس                           | NM 010826 17540                 | NM_016696 14733                  | AF332067   | NM_020612 57358 | AK011781  | S 67967             | NM 009482 22286              | NM 019990     | 1       | 1       | ١.,                             | NM_008158 14761                 | NM 013759 27361 |
|           |                     |                                  | ٠        | .,                 | 1                                |                   | ļ         | is<br>Funen         | 4                   |                       | -                           |                      |                              | F                               |                                  |            |                 |           |                     |                              |               |         |         |                                 |                                 |                 |
|           | 2                   |                                  |          |                    |                                  |                   |           |                     |                     |                       |                             |                      |                              |                                 |                                  |            |                 |           |                     |                              |               |         |         | -                               |                                 |                 |

| Figure 17 A | BIOLOGICAL FUNCTION | tumor related | unknown  | unknown              | metabolism                        | transport?           | transport            | signaling                         | protein degradation   | signaling (receptor) | misc     | unknown   | metabolism                    | signaling (receptor)            | unknown   | ctsk           | misc      | metabolism | traffic                          | metabolism          | metabolism             | protein degradation              | cell adh | transcription | transport                   | transport | translation                       | unknown  | unknown  | transcription | signaling         | lon channel                      | unknown  |
|-------------|---------------------|---------------|----------|----------------------|-----------------------------------|----------------------|----------------------|-----------------------------------|-----------------------|----------------------|----------|-----------|-------------------------------|---------------------------------|-----------|----------------|-----------|------------|----------------------------------|---------------------|------------------------|----------------------------------|----------|---------------|-----------------------------|-----------|-----------------------------------|----------|----------|---------------|-------------------|----------------------------------|----------|
|             | LOCALIZATION        |               |          | integral to membrane | cytosof; extrachromosomal circula | integral to membrane | integral to membrane | endoplas mic reticulum;integral t | endoplasmic reticulum |                      |          |           | extrachromosomal circular DNA | extracellular space;integral to |           | dynein complex | cytoplasm |            | Inner membrane;integral to membr | extracellular space | mitochondrion; nucleus | extracellular matrix;extracellul | axon     |               | integral to plasma membrane |           | endoplas mic reticulum extracellu |          |          |               | non-muscle myosin | Integral to membrane;synaptosome |          |
|             | GENE                | Stard10       |          | Mbc2                 | BC004012                          |                      | Slc16a3              | Ext3                              |                       | Crcp                 | Fpgt     | Brp16     | Gad2                          | Fzd3                            |           |                | Cryab     | Dtyrnk     | Slc25a11                         | Pla2g2d             | Nubp1                  | Adam15                           | Cntn2    |               | S lc8a1                     | Stard5    | Fkbp2                             |          |          | Scnm1         | Rab6ip2           | Grid2                            |          |
|             | rocus               | 56018         | 75773    | 23943                | 192185                            | 70652                | 80879                | 54616                             | 75659                 | 12909                | 75540    | 59053     | 14417                         | 14365                           | 74340     | 68097          | 12955     | 21915      | 67863                            | 18782               | 26425                  | 11490                            | 21367    | 77034         | 20541                       | 170460    | 14227                             | 78154    | 75879    | 69269         | 111173            | 14804                            |          |
|             | ACCESS              | NM_019990     | AK015063 | BC011482             | BC004012                          | AK017808             | _                    |                                   | NM_023790             | NM_007761            | AK006023 | NM_021555 | NM_008078                     | NM_021458                       | NM 021414 | NM_026556      | NM_009964 | \$82853    | 87                               | 9                   | NM_011955              | NM_009614                        | X81365   | BC012878      |                             | NM_023377 | i i                               | AK019590 | AK016374 | ı             | NM_053204         | l                                | AK016480 |
|             | 0.3                 |               |          |                      | -                                 | 1                    | -                    |                                   | 1                     | i na                 | -        |           |                               | <u></u>                         | -         | 1              | -         | 1          |                                  |                     |                        |                                  |          |               |                             |           |                                   | 1        | ٠        | · ·           | 4.71              |                                  |          |

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## Figure 17 B

| 3      |           | ACCESS                | LOCUS          | GENE          | LOCALIZATION  | BIOLOGICAL FUNCTION   |
|--------|-----------|-----------------------|----------------|---------------|---|-----------------------|
| 4      |           | AK012503              | 72563          |               |   | unknown               |
|        |           | NM_018801             | 54525          | S yt7         | integral to membrane;lysosome;sy  | transport             |
|        | 10        | NM_009352             | 21749          | Terf1         | chromosome-, telomeric region; nu   | cell cycle            |
| 27     |           | NM_019697             | 16508          | Kend2         | extracellular space;voltage-gate  | Ion channel           |
|        | -         | BC003975              | 30853          | MIf2          | nucleus   | tumor related         |
| -      | ٠.,       | AK017249              | 11842          | Arf3          | Golgi apparatus   | transport             |
| 1      |           | NM_019948             | 56619          | Clecsf9       | integral to plasma membrane   | signaling (receptor)  |
| 1      |           | AK013245              | 72748          |               | spliceosome complex   | transcription         |
| 15     |           | NM_008676             | 17966          | Nbr1          | cytos ol  | unknown               |
|        |           | NM_026348             | 67733          |               | cytoplas m  | signaling             |
|        |           | AK008415              | 67495          |               |   | unknown               |
|        | -         | NM_009166             | 20411          | S orbs 1      | stress fiber  | ctsk                  |
|        | لند       | AK011184              | 67039          |               | cytos keleton   | unknown               |
|        |           | U85993                | 319845         | ·             | extracellular space   | unknown               |
|        |           | AK009450              | 71904          |               | Integral to membrane  | unknown               |
|        | 200       | U43892                | 11306          | Abcb7         | inner membrane;integral to plasm  | vansport              |
|        |           | NM_025730             |                |               | cytoplasm   | unknown               |
|        |           | NM_009503             | 269523         | Vcp           | Golgi apparatus;endoplasmic reti  | transport             |
|        |           | AK016247              | 18640          | Pfkfb2        | cytos ol  | metabolism            |
|        |           | NM_026304             | 67669          | 11 1000       |   | unknown               |
|        |           | NM_008288             |                | Hsd11b1       | microsome   | metabolism            |
|        |           | BC017615              | 94249          | Slc24e3       | integral to membrane;plasma memb  | transport             |
|        |           | NM_019410             |                | Pfn2          | actin cytoskeleton  | ctsk                  |
|        |           | AK003794              | 97541          | Qars<br>No1   |   | translation           |
|        |           | NM_010946<br>AK019481 | 18203<br>68260 | Ntan1         | cytoplas m; nucleus   | misc                  |
|        |           | AF 220355             | 56747          | A1843918      |   | unknown               |
|        |           | NM_013614             |                | Odc           |   | unknown               |
|        | 44        | NM_009883             |                | Cebpb         | mitochondrial inner membrane  | misc                  |
|        | 1         | AK018551              | 107022         | Ogopho        | cytoplasm;nucleus Integral to membrane  | apoptosis             |
|        |           | NM_011929             |                | Clen6         | Integral to plasma membrane   | unknown               |
|        |           | AK020859              | 68146          | CICIO         | integral to pleasing thembrane  | ion channel           |
|        | +11       | NM_016737             |                | Stip1         | Golgi apparatus; nucleus  | unknown               |
| 17     | . 2       | NM_008983             |                | Ptprk         | extracellular space; integral to  | signaling (receptor)  |
| H      |           | AK020099              | 68180          | - <del></del> | - Add to the of | unknown               |
|        | 1         | NM_008161             |                | Gpx3          | extracellular space   | metabolism            |
|        | HE        | NM_007702             |                | Cidea         | cytosol;mitochondrial membrane  | apoptosis             |
|        |           | AK020410              | 52120          | D8Ertd354e    | Integral to membrane  | unknown               |
|        |           | NM_011787             |                | Amfr          | integral to endoplasmic reticulu  | protein degradation ? |
|        |           | AK005033              | 52432          | Ppp2r2d       | protein phosphatase type 2A comp  | signaling             |
|        | 8.0       | AF279458              | 19386          | Ranbp2        | cytoplasm   | metabolism            |
|        | -         | AK016267              | 65103          | Arl6ip6       | integral to membrane  | unknown               |
|        |           | AK014235              | 73192          | Xpot          | nucieus   | traffic               |
|        | H         | NM_01180              |                | Clpx          | mitochondrion   | transport             |
|        | 111       | AK010466              | 76484          |               |   | unknown               |
|        |           | NM_00752              | 5 12021        | Bard1         | cytoplasm:nucleus   | transcription         |
| 40     | P         | <b>∄ AK008080</b>     | 76526          |               | splice asome complex  | transcription         |
|        | 115       | BC003247              | 229725         | Mele          |   | transport             |
| 1,3    | 1 :45     | AK003866              | 28295          | D10Jhu81e     | cell wall;extracellular space;mi  | unknown               |
| 14     | a. tretts | AF060088              | 26440          | Psma1         | membrane;proteasome core complex  | protein degradation   |
|        | ı         | AK020868              | 68073          |               |   | unknown               |
|        |           | AK020780              | 77929          |               |   | traffic ?             |
|        |           | AK009497              | 69568          | Vkorc1l1      |   | metabolism            |
|        |           | aF071173              | 15204          | Herc2         |   | protein degradation   |
|        |           | NM_01957              |                | Tm4sf9        | Integral to membrane  | cell adh              |
|        |           | AK014134              | 73172          |               | extrachromosomat circular DNA   | unknown               |
|        |           | NM_02527              |                | Dppa5         | cytoskelaton  | mlsc                  |
|        |           | NM_01963              |                | Csda          | perinuclear space   | transcription         |
|        |           | NM_00859              |                | Met           | extracellular space;integral to   | signaling (receptor)  |
| Larren |           | AK014948              |                |               |   | unknown               |
| 4      |           | NM_00967              |                | Ankfy1        |   | transcription         |
| 0      | ٠.        | AK005944              |                | Arrdc5        |   | unknown               |
| į      | F         | AF320615              |                |               |   | unknown               |
|        |           |                       |                |               |   |                       |

|             | 1                   | ı                            | i                               | i            | ١        | ŀ                    | 1        | 1                   | 1                   | 1               | 1        | 1                    | ì                                | ł               | ı         | ı                  | 1        | ı               | 1                               | 1                   |   |
|-------------|---------------------|------------------------------|---------------------------------|--------------|----------|----------------------|----------|---------------------|---------------------|-----------------|----------|----------------------|----------------------------------|-----------------|-----------|--------------------|----------|-----------------|---------------------------------|---------------------|---|
| Figure 18 A | BIOLOGICAL FUNCTION | ranscription                 | signaling (receptor)            | metabolism ? | unknown  | signaling (receptor) | unknown  | protein degradation | unknown             | signaling       | unknown  | unknown              | growth factor                    | unknown         | signaling | metabolism         | unknown  | misc            | protein, degradation            | transport           |   |
|             | LOCALIZATION        | transcription factor complex | extracellular space;Integral to | cytoplasm    |          | Integral to membrane |          | cytosol             | extracellular space | cytosol         |          | peroxisomal membrane | extracellular matrix;extracellul |                 |           | Insoluble fraction |          | cytoplasm       | extracellular space;integral to | extracellular space |   |
|             | GENE                | Hoxa2                        | Plxna3                          |              |          | Mox2r                |          | Nt5c2               |                     | дшО             |          | Pex2                 | Tgfb1                            |                 |           | Pde1a              |          | Calb1           | Adam9                           |                     |   |
|             | Locus               | 15399                        | 18846                           | 68214        | 75768    | 57781                |          | 76952               | 66857               | 18378           | 74119    | 58869                | 21803                            | 69623           | 75629     | 18573              | 74271    | 12307           | 11502                           | 71775               |   |
|             | ACCESS LOGUS        | NM 010451 15399              | NM 008883 18846                 | (AK018953    | AK014752 | NM_021325 57781      | AK009205 | AK008045            | NM 025806 66857     | NM 011010 18378 | AK004627 | NM_021483 58869      | NM_011577 21803                  | NM_027142 69623 | AK006173  | NM 016744 18573    | AK006807 | NM_009788 12307 | NM_007404                       | AK005035            |   |
|             |                     | -                            |                                 | _            | _        | 1                    | -        | }<br>}              |                     |                 | 1        | _                    | -                                |                 |           |                    | -        |                 |                                 | :                   | - |
|             | Fa                  | _                            | - 3                             |              |          |                      | -        | •                   | <u> </u>            |                 |          | _                    | ·                                | -               |           | _                  |          |                 |                                 |                     | • |
|             | F 5                 | tio)                         |                                 |              |          |                      |          |                     |                     |                 |          |                      |                                  |                 |           |                    |          |                 |                                 |                     |   |

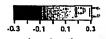
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#### Figure 18 B

|  |         |             |  | •                    |
|--|---------|-------------|--|----------------------|
| ACCESS.  | LOCUS   | GENE        | LOCALIZATION                           | BIOLOGICAL FUNCTION  |
| NM_008971  | 19230   | Ptk9        | actin cytoskeleton                     | ctsk                 |
| NM_008300  | 15525   | Hspa4       | cytoplasm                              | translation          |
| NM_011341  | 20318   | S df4       | Golgi apparatus; extracellular sp      | misc                 |
| NM_008946  | 19175   | Psmb6       | proteasome core complex (sensu E       | protein degradation  |
| D29797   | 20908   | Stx3        | Integral to membrane                   | transport            |
| NM_009377  | 21823   | Th          | omithine carbamoyitransferase c        |                      |
| NM_009729  | 11984   | Atp6v0c     | hydrogen-translocating V-type AT       | metabolism           |
| NM_007917  | 13684   | É if4e      | cytoplasm                              | transport            |
| NM_007761  | 12909   | Crcp        | сушразтт                               | translation          |
| AK013595   | 72871   | ОТОР        | ······································ | signaling (receptor) |
| NM_026580  | 68149   |             |  | unknown              |
| NM_010727  |         | 1 4         |  | protein degradation  |
| Action Comments  | 16924   | Lnx1        | cytoplasm;extracellular space          | signaling            |
| AK018159   | 18549   | Pcsk2       | Golgi apparatus; extracellular sp      | translation          |
| AK004506   | 68942   |             |  | unknown              |
| *. NM_026434   | 67889   |             | viral nucleocaps id                    | unknown              |
| MM_011990  | 26570   | S lc7a11    | Integral to membrane                   | transport            |
| NM_008903  | 19012   | Ppap2a      | integral to plasma membrane;memb       | metabolism           |
| NM_025962  | 67096   |             | membrane                               | unknown              |
| NM_007731  | 12817   | Col13a1     | collagen type XIII                     | ecm                  |
| NM_009819  | 12386   | Catna2      | cytoskeleton                           | cell adh             |
| NM_023305  | 67123   | Ubap1       | 26S proteasome                         | protein degradation  |
| NM_008235  | 15205   | Hes1        | transcription factor complex           | transcription        |
| BC015273   | 110157  | Raf1        | cytosol;plasma membrane                | signaling            |
| AK003278   | 52466   | D11Ertd18e  | Integral to membrane                   | transport            |
| NM_030717  | 80907   | Lactb       | extracellular space; integral to       | misc                 |
| NM_010769  |         | Matn1       | extracellular matrix;extracellul       | ecm                  |
| BC015253   | 11688   | Alox15b     |  | immune response      |
| AK010382   | 243983  | THORTOD     | actin cytoskeleton;integral to m       | transcription        |
| BC003451   | 232087  | Mat2a       | cytoplasm                              |                      |
| NM_011917  |         | Xm2         | nucleus                                | metabolism           |
| AK013309   | 170707  | Usp31       | nucieus                                | transcription        |
| AK013305   | 67607   | Usp31       |  | protein degradation  |
|  |         |             |  | unknown              |
| AK003542   | 73728   |             | mitochondrial inner membrane           | unknown              |
| AK017484   | 67023   |             | mitochondrial matrix                   | transcription        |
| NM_025779  |         | <del></del> | integral to membrane                   | unknown              |
| AK016786   | 71804   |             | ribosome                               | unknown              |
| NM_011626  |         | Tparl       | extracellular space; integral to       | unknown              |
| NM_009421  |         | Traf1       | cytoplasm                              | signaling            |
| AC 079832  | 286947  | Adh6b       | cytosol ?                              | metabolism ?         |
| AK021152   | 77643   | ···         |  | unknown              |
| BC016073   | 68916   |             |  | unknown              |
| NM_025808  | 66863   | Lztr1       |  | transcription        |
| NM_025566  | 66443   |             |  | unknown              |
| NM_022418  | 64295   |             | extracellular space;integral to        | unknown              |
| NM_022418  | 1 19244 | Ptp4a2      | soluble fraction                       | signaling            |
| NM_00750   |         | Atp6v1a1    | Integral to plasma membrane; prot      | metabolism           |
| MM_011018  |         | S qstm1     | cytosol                                | protein degradation  |
| 17 NM_00861  |         | Mdh2        | mitochondrial matrix                   | metabolism           |
| NM_00769   |         | Chrm4       | Integral to plasma membrane            | signaling (receptor) |
| NM_01386   |         | Bcar3       | actin filament                         | signaling (GEF)      |
| BC017130   | 224938  |             | acus marners.                          |                      |
| AK008333   | 70257   | · Jar       | males - Land - Land                    | unknown              |
| NM_01025   |         | Cobert      | mitochondrion                          | unknown              |
| THE PROPERTY OF THE PROPERTY O | 0 14394 | Gabra1      | extracellular space;Integral to        | signaling            |
| SS   |         |             |  |                      |

3NS BS



Log<sub>2</sub>(ratio)

Figure 19
BIOLOGICAL FUNCTION

| ,<br>3 |  |           |        |   |                                    | rigure 19                      |
|--------|--|-----------|--------|---|------------------------------------|--------------------------------|
|        |  | ACCESS    | LOCUS  | GENE                                    | LOCALIZATION                       | BIOLOGICAL FUNCTION            |
| 1      | N SELECT   | IM_010991 | 18348  | Olfr49                                  | integral to plasma membrane        | signaling (receptor)           |
|        | N  | IM_010595 | 16485  | Kcna1                                   | voltage-gated potassium channel    | transport                      |
|        | not berings) Skielenen.  | IM_025708 | 66690  |   | reitage game pomoralin a latitle   |                                |
| -      | Charles and Mary Property  | K013948   | 69269  | Canal .                                 | <del></del>                        | unknown                        |
| Ī      |  |           |        | S cnm1                                  |                                    | transcription                  |
| 1      |  | IM_023721 | 73834  | Atp6v1d                                 | hydrogen-transporting ATP ase V1   | Transport                      |
| 1      |  | K012159   | 72542  |   | extracellular space                | metabolism                     |
|        | Marie V  | IM_010412 | 15184  | Hdac5                                   | cytoplasm; histone deacetylase co  | cell cycle                     |
| 2      | N THE  | M_008585  | 17287  | Mep1a                                   | extracellular space; integral to   | protein degradation (secreted) |
|        | Marie V  | IM_011917 | 24128  | Xm2                                     | nucleus                            | transcription                  |
|        |  | M_007889  | 13544  | Dvl3                                    | cytoplasm                          | signaling                      |
| Ì      |  | M_010661  | 268482 | Krt1-12                                 | intermediate filament              |                                |
|        |  | IM_009634 | 11564  | Adsl                                    |                                    | ctsk                           |
| -      |  |           | 17237  | Mgrn1                                   | ribosome                           | metabolism                     |
|        | The same of the sa | K011747   |        | WIGHTI                                  | extracellular                      | apoptosis                      |
|        |  | NM_023217 | 66522  | ·                                       | cytoplasm                          | metabolism?                    |
|        |  | VM_011049 | 18555  | Pctk1                                   | cytoplasm                          | misc                           |
|        |  | AK007822  | 107747 | Fthfd                                   |                                    | metabolism                     |
|        | Fab. 11/4  | 4K003819  | 74777  |   |                                    | misc                           |
|        | 1 3 3 /  | AF 100956 |        | a lot                                   |                                    | unknown                        |
|        | 1  | AK005588  | 69317  | -                                       | chromatin; nucleus                 | transcription                  |
|        | 11.00  | AK020471  | 12631  | Cfi1                                    | cytoskeleton;nucleus               | ctsk                           |
|        |  | NM_009128 | 20250  | Scd2                                    | endoplasmic reticulum;integral t   |                                |
|        |  | NM_008707 | 18107  | Nmt1                                    | cytoplasm                          | metabolism                     |
|        | PARTICIPATE TO THE PARTICIPATE OF THE PARTICIPATE O | AK016685  | 74443  | WINE                                    |                                    | misc                           |
|        | 17. 12. 17. 17. 17. 17. 17. 17. 17. 17. 17. 17   | AK014142  | 67287  | <del></del>                             | endoplas mic reticulum             | metabolism                     |
|        |  |           |        |   |                                    | unknown                        |
|        |  | NM_011585 | 21841  | Tia1                                    | lys os ome; nucleus                | apoptosis                      |
|        | Part Part of Continue  | AK011881  | 67148  | ········                                | microtubule                        | ctsk                           |
|        | 121111   | AK002704  | 68365  | Rab14                                   |                                    | signaling                      |
|        | Contract to the second   | NM_026670 | 68310  |   | integral to membrane               | unknown                        |
|        |  | NM_013892 | 30052  | Pcsk1n                                  | Golgi trans face;extracellular s   | misc                           |
|        |  | NM_007427 | 11604  | Agrp                                    | extracellular space                | signaling (secreted)           |
|        |  | AK005887  | 69354  | S lc38a4                                | Integral to membrane               | transport                      |
|        | THE REAL PROPERTY.   | NM_011623 | 21973  | Top2a                                   | condensed chromosome; metaphase c  | coll cyclo                     |
|        |  | NM_019768 | 56397  | Morf4l2                                 | chromatin; nucleus                 | transcription                  |
|        | V 772750 +777750   | NM_010377 | 107970 | Hist1h1t                                | nucleosome;nucleus                 | cell cycle                     |
|        | Contract of the contract of  | AK016475  | 70981  | Mischill                                | nacious ome, nacious               |                                |
|        | of the later of the later  | AK020837  | 77799  | S la 2                                  |                                    | unknown                        |
|        | Transition of the last   | NM_054046 | 23854  |   | cytoplasmic vesicle;late endosom   | signaling                      |
|        |  | NM_008401 |        | Def8                                    | extracellular                      | signaling                      |
|        |  |           | 16409  | ltgam                                   | cytoskeleton; external side of pl  | cell adh (receptor)            |
|        | -  | NM_053074 | 18226  | Nup62                                   | nuclear pore                       | transport                      |
|        |  | NM_010278 | 14581  | Gfi1                                    | transcription factor complex       | transcription                  |
|        |  | NM_013932 | 30959  | Ddx25                                   |                                    | translation                    |
|        | Mary Chipups   | NM_053204 | 111173 | Rab6lp2                                 | non-muscle myosin                  | signaling                      |
|        | 200  | AB055154  | 108138 | Xrcc4                                   | extracellular;nucleus              | cell cycle                     |
|        |  | NM_010242 | 14345  | Fut4                                    | Golgi apparatus;integral to memb   | translation                    |
|        |  | AF411834  | 20620  | Snk                                     | phosphorylase kinase complex       | cell cycle                     |
|        |  | NM_009748 | 12068  | Bet1                                    | Golgi membrane; and oplasmic retic | transport                      |
|        |  | AK009343  | 71907  | S erpina9                               | extracellular space                | protein degradation            |
|        | Tr. 400 / 100 mg   | NM_009147 | 20334  | Sec23a                                  | Golgi membrane;endoplasmic retic   | traffic                        |
|        |  | NM_009314 | 21337  | Tacr2                                   | Integral to membrane; plasma memb  | signaling (receptor)           |
|        | 1 141-   | NM_025323 |        | · • • • • • • • • • • • • • • • • • • • | nucleus                            |                                |
|        |  | NM_009873 |        | Cdk6                                    | cytoplasm                          | transcription                  |
|        |  | NM_025520 |        | Lsm5                                    | +jwμα3111                          | cell cycle                     |
|        | }  |           |        |   |                                    | transcription                  |
|        |  | NM_009213 |        | S mpd2                                  | Integral to membrane               | lipid metabolism               |
|        | 1.   | NM_025714 |        | D3E rtd250e                             | myosin                             | unknown                        |
|        | []   | NM_008890 |        | Pnmt                                    |                                    | metabolism                     |
|        |  | NM_023876 |        | Elp4                                    | extracellular                      | unknown                        |
|        |  | AK019600  | 78795  |   | transcription factor TFIID compl   | unknown                        |
|        |  | NM_011962 |        | P lod3                                  | endoplasmic reticulum;extracellu   | metabolism                     |
|        |  | NM_009278 | 20823  | Ssb                                     | nucleus; virat nucleocapsid        | transcription                  |
|        |  | AK004757  | 71728  |   | cytoplasm                          | signaling                      |
|        |  | AF 177211 | 140795 | Gpr105                                  | Integral to membrane               |                                |
|        | ri   | AK016509  | 71003  |   | extracellular space                | signaling (receptor)           |
|        |  | AK016383  | 75863  |   | evancement shace                   | protein degradation            |
|        | }  |           |        |   |                                    | unknown                        |
|        | لللا   | AK016517  | 75725  |   |                                    | unknown                        |
|        |  |           |        |   |                                    |                                |

| Figure 20   | JEGGICAL FUNCTION | unknown                     | translation ? | ü     | protein degracation              | unknown   | nnknown   |           | signaling | 1                   | unknown  | ranscription | transcription                | signaling (receptor)            | unknown  | signaling (receptor)          | Immune response (secreted) | signaling (receptor) | protein degradation | own        | port                             | metabolism | signaling?            | ycle              | metabolism    | OWII     | ycle        | nwa     | umo        | growth factor       |            | metabolism    | ф                    | growth factor (secreted) | protein degradation | Wn                   |          |
|-------------|-------------------|-----------------------------|---------------|-------|----------------------------------|-----------|-----------|-----------|-----------|---------------------|----------|--------------|------------------------------|---------------------------------|----------|-------------------------------|----------------------------|----------------------|---------------------|------------|----------------------------------|------------|-----------------------|-------------------|---------------|----------|-------------|---------|------------|---------------------|------------|---------------|----------------------|--------------------------|---------------------|----------------------|----------|
| Ĕ,          | =                 |                             | tran          | misc  | prof                             | ank       | בחלרו     | mbc       | sgu       | ecm?                | unkr     | trans        | trans                        | sign                            | unku     | signs                         | immi                       | signa                | prote               | unknown    | transport                        | meta       | slgna                 | cell cycle        | meta          | unknown  | cell cycle  | unknown | unknown    | grow                | traffic    | metal         | cell adh             | growd                    | proteil             | unknown              |          |
| MOTATION    | LUCALIZATION      | integral to plasma membrane | ribosome      |       | extracellular matrix;extracellul |           |           |           | nucleus   | extracellular space |          | nucleus?     | transcription factor complex | extracellular space;integral to |          | Intermediate filament nucleus | extracellular space        | integral to membrane |                     | myosin     | integral to membrane;synaptic ve | cytosol    | Integral to membrane? | nucleus;ribos ome | mitochondrion |          | cytoplasm   |         |            | extracellular space |            | mitochondrion | Integral to membrane | extracellular space      | cytoskeleton        | integral to membrane |          |
| i.          | GENE              | s yngr3                     |               | Qut1  | Timp4                            | ORF6      |           | Ndufa 11  | Rgs12     | Robo1               |          | Btbd11       | S itpec                      | Cxadr                           |          | Esr2                          | 61                         | Ors19                |                     | D3Ertd250e | Syt8                             | Cbr3       | Caml?                 | Gadd45a           |               | AI428936 |             |         |            |                     |            | Мірер         | Clecsf13             | Pripa                    |                     |                      |          |
|             | במרמא             | 20974                       | 73866         | 60507 | 110595                           | 29805     | 76730     | 69875     | 71729     | 19876               | 78083    | 74007        | 26940                        | 13052                           | 67509    | 13983                         | 16198                      | 57250                | 68149               | 52184      | 55925                            | 109857     | 12328                 | 13197             | 78174         | 233066   | 68121       | 69185   | 73809      | 67000               | 74741      | 70478         | 51811                | 19110                    | 67451               | 67888                |          |
| 6<br>0<br>0 | ACCESS            | NM_011522                   | AK015916      |       |                                  | NM_013859 | AK 009163 | AK 008201 | AK004813  | Y17793              | AK020687 | AK018115     | NM_012029                    | BC004680                        | AK015650 | NM_010157                     | NM_008373                  |                      | NM_026580           |            | NM_018802                        |            |                       | NM_007836         | AK019665      | 1        | NM_023873 6 |         | AK015086 7 | NM_025896 6         | AK017577 7 |               |                      | NM_011165 1              | AK004650 6          | MM_026433 6          |          |
|             |                   |                             |               | 4.5   |                                  |           |           |           |           | 4.^                 |          |              |                              |                                 |          |                               |                            |                      |                     |            |                                  |            |                       |                   |               |          |             |         |            |                     |            |               |                      |                          |                     |                      | 88<br>88 |

| 21  |
|-----|
| Lre |
| Ē   |

| BIOLOGICAL FUNCTION | transcription | signating (receptor) | unknown   | translation                     | apoptosis | ctsk 7             | umknown  | unknown              | unknawn    | signaling                   | unknown   | unknown   | unknown                        | transcription                | misc      | signaling (MAPR) | unknown          | signaling         | protein degradation | lipid metabolism     | transport                        | cell cycle | signaling | signaling | unknown  | signaling                        | Signaling (receptor)             | ctsk      | signaling                   | tumor related                 | cell cycle       | signaling       | unknown   | misc      | unknown                           | cell cycle                       | misc             | misc      |
|---------------------|---------------|----------------------|-----------|---------------------------------|-----------|--------------------|----------|----------------------|------------|-----------------------------|-----------|-----------|--------------------------------|------------------------------|-----------|------------------|------------------|-------------------|---------------------|----------------------|----------------------------------|------------|-----------|-----------|----------|----------------------------------|----------------------------------|-----------|-----------------------------|-------------------------------|------------------|-----------------|-----------|-----------|-----------------------------------|----------------------------------|------------------|-----------|
| LOCALIZATION        | nucleus       | cytoplasmic vesicle  | тетргапе  | chaperonin-containing T-complex | nucleus   | actin cytoskeleton |          | integral to membrane |            | integral to plasma membrane |           |           | cytoplasm;integral to membrane | transcription factor complex | суторівят | cytoplasm        | Golgi a pparatus | non-muscle myosin | 265 proteasome      | integral to membrane | Golgi apparatus;endoplasmic reti | spindle    |           | lysosome  |          | connexon complex;integral to mem | extracellular matrix extracellul | Z disc    | integral to plasma membrane | extrachromosomal circular DNA | cytoplasmuncleus | plasma membrane |           | cytoplasm | ribulos e bisphosphate carboxylas | nucleotide excision repair compl | chromatinnucleus | cytoplasm |
| GENE                | 1 mx1a        | Ect2                 |           | Mkks                            | Noi3      | Btbd5              |          |                      | Tsx        | Mpp3                        |           |           | D1Bwg0491e                     | KII3                         | Ndr3      | Map3k2           |                  | Rab6ip2           | Usp18               | Aqpat4               | Trappc3                          | Prc1       | Appa2     |           |          | Gla5                             | Dcn                              |           | Gabra4                      | Bcl7c                         | Halapx           |                 |           |           |                                   | Ercc1                            | C dyl2           | Cyhr1     |
| 2110                | 110648        | 13605                | 66147     | 59030                           | 78688     | 68999              |          | 69894                | 72127      | 13384                       | 80294     | 56772     | 56030                          | 16599                        | 29812     | 26405            | 66968            | 111173            | 24110               | GR262                | 27096                            | 233406     | 11784     | 74008     | 59227    | 14613                            | 13179                            | 56376     | 14397                       | 12055                         | 00909            | 72621           | 66268     | 68265     | 68043                             | 13870                            | 75796            | 54151     |
| טטטטפ               | NM 033652     | NM 007900            | NM 025383 | NM_021527                       | AK021023  | AK002637           | RC005774 | AKOOR338             | NIM 009440 | NM 007863                   | NM 030262 | NM 019914 | NM_018872                      | NM_008453                    | NM 013865 | NM 011946        | AK010202         | NM 053204         | NM 011909           | A 17 OO 5 1 3 0      | MM 013718                        | AE408435   | 1 34676   | AV018122  | AK017528 | NM ODB121                        | NM 007833                        | NM 019808 | AK013727                    | NM 009746                     | NM 021898        | AK012624        | NM 025457 | NM 026645 | NM 026526                         | NM 007948                        | AK015452         | AK004009  |
| \$                  |               |                      | A. 15     |                                 | はま        |                    |          |                      |            | 100                         |           | į<br>     | ļ.~.                           | -                            | -         |                  |                  |                   | j.                  | 1                    | -                                |            |           | I         | 1        |                                  |                                  |           |                             |                               |                  |                 |           |           |                                   |                                  |                  |           |

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| Figure 22 | BIOLOGICAL FUNCTION | cell cycle | unknown  | unknown  | protein degradation . | unknown | unknown                               | Immune response      | unknown  | transport? | meta bolism   | immune response              | meta bolis m | traffic                      | transcríption    | transcription                | cell cycle | metabolism               | signaling | cell cycle | cell cycle                       | unknown  | unknown                    | tumor related - apoptosis - cell cyclo | signaling            | unknown   | есш                           |           |   |
|-----------|---------------------|------------|----------|----------|-----------------------|---------|---------------------------------------|----------------------|----------|------------|---------------|------------------------------|--------------|------------------------------|------------------|------------------------------|------------|--------------------------|-----------|------------|----------------------------------|----------|----------------------------|--|----------------------|-----------|-------------------------------|-----------|---|
|           | LOCALIZATION        | nucleus    |          |          |                       |         | mcleus                                | Integral to membrane |          | membrane   | mitochondrion | extracellular space;membrane |              | RAN-binding protein; nucleus | mediator complex | transcription factor complex |            | mitochondrion;peroxisome | cytoplasm |            | nuclear cyclin-dependent protein |          | endosome;nuclear chromatin | nuclear ubiquitin ligase complex       | integral to membrane |           | collagen; extracellular space |           |   |
|           | GENE                | Stagi      |          | R wdd2   | Ctsq                  |         |                                       | Ms4a4d               | Nudt11   |            |               | Cfi                          | Pfkfb1       | Xpo4                         | Mer2c            | Zfp68                        | Smt3h1     | Mycd                     | Sh3bp2    | Anapc5     | Ccne1                            |          | KIndc3                     | Cul2                                   | Ptger1               |           | Col19a1                       |           |   |
|           | rocus               | 20842      | 66264    | 69519    | 104002                | 68017   | 67178                                 | 66607                | 58242    | 67939      | 72479         | 12630                        | 18639        | 57258                        | 17260            | 24135                        | 20610      | 56690                    | 24055     | 59008      | 12447                            | 72155    | 71765                      | 71745                                  | 19216                | 69441     | 12823                         |           |   |
|           | ACCESS              | NM 009282  | AK003287 | AK006533 | NM 029636             | 1       |                                       | NM 025658            | AB041576 | AK008574   | NM 024255     | NM_007686                    | X98848       | 200                          | NM 025282        | NM 013844                    | NM 019929  | RC004764                 | NM 011893 | NM 021505  | NM 007633                        | AK012097 | MM 027910                  | AK016520                               | M 013641             | AK 006273 | NM_007733                     |           |   |
| _         | ۳ <sub>٦</sub>      | -          |          | -        | -                     |         | \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ |                      |          | -          |               |                              |              |                              | -                |                              |            |                          |           |            |                                  |          |                            |  |                      |           |                               | B2<br>BN2 | 3 |

| Figure 23 A |   | BIOLOGICAL FUNCTION | unknown         | apoptosis        | unknown              | unknown         | ctsk             | transcription   | translation                  | unknown         | transcription | unknown              | transport                   | CDK             |
|-------------|---|---------------------|-----------------|------------------|----------------------|-----------------|------------------|-----------------|------------------------------|-----------------|---------------|----------------------|-----------------------------|-----------------|
|             |   | LOCALIZATION        | ribosome        | plas ma membrane | integral to membrane |                 | kines in complex | cytoplasm       | extracellular space;membrane | суторіаѕт       | ructeus       | Integral to membrane | integral to plasma membrane | cytosol         |
|             |   | GENE                |                 |                  | Zfp261               |                 | KirZa            | Brd7            | Fut11                        |                 | Dek           | D11Ertd736e          | Ahcf3                       | Fmnl            |
|             |   | Locus.              | 66492           | 75625            | 56364                | 80069           | 16563            | 26992           | 73058                        | 67683           | 110052 Dek    |                      | 27406                       | 57778           |
|             |   | ACCESS LOCUS GENE   | NM 025594 66492 | NM 023788 75625  | NM 019831 56364      | NM 026908 69008 | NM 008442 16563  | NM 012047 26992 | 4 4 17 0 1 4 0 2 9           | NM 026312 67683 | AK007546      | 1 41009375           | AF213381                    | NM 019679 57778 |
| ſ           | _ | 0.0 0.2 0.4         |                 |                  |                      |                 |                  |                 |                              |                 |               |                      | <u> </u>                    |                 |
| Ì           |   | 7                   | (ratio)         |                  |                      |                 |                  |                 |                              |                 |               |                      |                             |                 |

B2 BN2



Figure 23 B

| ŀ  | ACCESS    | LOCUS  | GENE                                   | LOCALIZATION   | BIOLOGICAL FUNCTION            |
|--|-----------|--------|--|--|--------------------------------|
|  | BC 005741 | 233835 | Tnrc6                                  | extracellular  | misc                           |
|  | NM_019509 |        | ****                                   |  | unknown                        |
|  | AB047921  | 67210  |  | nucleus  | transcription?                 |
| <b>Makern</b>  | D86949    | 18845  | Plxna2                                 | extracellular space; integral to   | signaling                      |
|  | AJ288061  | 76707  | Clasp1                                 | cytoplasmic microtubule;microtub   | ctsk                           |
|  | NM_009864 | 12550  | Cdh1                                   | cell-cell adherens junction;extr   | cell adh                       |
|  | BC004626  | 72722  |  | membrane   | misc                           |
|  | NM_021452 | 58802  | Kenmb4                                 | integral to plasma membrane  | lon channel                    |
|  | AK019985  | 77521  |  | non-muscle myosin  | signaling                      |
| Black Control of the Control   | NM_019635 | 56274  | Stk3 ·                                 | cytoplasm;protein kinase CK2 com   | apoptosis                      |
|  | AK019434  | 28040  | D6Wsu163e                              | -3   | unknown                        |
|  | AK007999  | 69815  |  | extracellular space;integral to  | unknown                        |
| THE CONTRACT OF THE CONTRACT O | AK002416  | 68350  |  | Integral to membrane;lateral pla   | transport?                     |
| TO CONTRACTOR AND ADDRESS.   | NM_008078 | 14417  | Gad2                                   | extrachromosomal circular DNA  | metabolism                     |
|  | AK017149  | 75964  |  | CASSELLO (INSSOLID) CHECKEL DATA   | unknown                        |
|  | NM_021560 | 59058  | Bhlhb5                                 | transcription factor complex   | transcription                  |
|  | NM_018812 | 229615 | Pias3                                  | nucleus  | transcription                  |
|  | NM_025855 | 52665  | E chdc1                                | mitochondrion  | unknown                        |
| STATE OF LABOUR DE   | AK020702  | 78428  |  | THE CHOICE OF  | unknown                        |
|  | NM_033327 | 94187  | E bfaz                                 | transcription factor complex   | transcription                  |
|  | NM_018764 | 54216  | Pcdh7                                  | extracellular space;integral to  | cell adh                       |
| THE SEC  | AK018327  | 76206  |  | Integral to membrane   | unknown                        |
|  |           | 71767  |  |  | protein degradation ?          |
|  | NM_013638 | 19120  | Prm3                                   | nucleos ome; nucleus   | cell cycle                     |
|  | NM_011500 | 268980 | Strn                                   | cytoplasm  | transcription                  |
| -  | AK016466  | 70965  |  |  | signaling                      |
|  | NM_027019 | 69287  | Odf3                                   | extracellular space; outer dense   | signaling (secreted)           |
|  | BC 004768 |        |  | - And a contract of the contra | unknown                        |
|  | AK013464  | 67515  |  | protein serine-threonine phospha   | signaling (osmosis response)   |
| -  | AK 006014 | 69428  |  |  | unknown                        |
| and Straight   | NM_019551 | 56196  | Ttrap                                  | cytoplasm  | signaling                      |
| 444  | AK006617  | 73284  | Ddit41                                 | membrane   | Immune response ?              |
|  | NM_022995 | 65112  |  | integral to membrane   | misc                           |
| The state of the s | NM_031261 | 83457  | Fthi17                                 | ferritin complex   | misc                           |
| a market and   | NM_009748 | 12068  | Bet1                                   | Golgi membrane;endoplasmic retic   | transport                      |
|  | BC004766  | 71799  | Ptcd1                                  | ribosome   | unknown                        |
| 130.3.0  | AF 105217 | 57813  | Tk2                                    | mitochondrion  | metabolism                     |
|  | AK004943  | 66627  |  | endoplasmic reticulum  | unknown                        |
|  | NM_026413 | 67854  | Słco6b1                                | Integral to membrane   | transport                      |
|  | X74504    | 27883  | D16H22S680E                            | chromatin  | unknown                        |
|  | NM_009390 |        | Til                                    | extracellular space  | protein degradation (secreted) |
|  | NM_007614 |        | Catnb                                  | adherens junction;basolateral pl   | cell adh                       |
| ''   | NM_025315 |        | Surb7                                  | DNA-directed RNA polymerase II   | transcription                  |
| ļ  | NM_022331 | 64209  | Herpud1                                | endoplasmic reticulum membrane;i   | signaling?                     |
| 1  | BC 003235 | 71665  | Fuca                                   | lysosome   | metabolism                     |
|  | AK018594  | 68145  | ······································ |  | misc                           |
|  | AK005015  | 246277 | Csad                                   |  | metabolism                     |
|  | NM_011156 |        | Prep                                   | cytopias m; nucleus  | protein degradation            |
|  | AK009362  | 99650  |  |  | Unknown                        |
| 1 5  | NM_018872 |        | D1Bwg0491e                             | cytoplasm;integral to membrane   | unknown                        |
| 1 3  | NM_030684 |        | Trim34                                 | cytoplasm  | unknown                        |
|  | AJ006215  | 12764  | Cmas                                   | cytoplasm;nucleus  | metabolis m                    |
|  | NM_008839 |        | Pik3ca                                 | phospholnositide 3-kinase comple   | apoptosis                      |
|  |           |        |  | the transfer of white  | - popular                      |



| 4  |                         |             |                |             |  | rigure 24               |
|----|-------------------------|-------------|----------------|-------------|--|-------------------------|
| .3 |                         | ACCESS      | Locus          | GENE        | LOCALIZATION   | BIOLOGICAL FUNCTION     |
| F  | MARKET.                 | NM_007863   | 13384          | Мрр3        | Integral to plasma membrane  | signating               |
| 1  |                         | AK014582    | 70807          | Arrdc2      | 3 -  |                         |
| į  |                         | NM_025994   | 27984          | D4Wsu27e    |  | unknown                 |
|    |                         |             | 75879          | - 10730276  |  | unknown                 |
| ¥  | 75                      | NM_011801   | 23837          | Cfdp        | basement membrane; integral to me  | unknown                 |
|    |                         | AK005888    | 69324          | <del></del> | best title it with the state of | apoptosis               |
|    |                         | BC004604    | 104318         | Csnk1d      | cytoplas m   | unknown                 |
| ì  |                         | NM_008707   | 18107          | Nmt1        |  | signaling               |
|    |                         |             | 12426          | Cckbr       | cytoplasm  | misc                    |
|    | STREET, SQUARE, SQUARE, | NM_013569   | 16511          |             | Integral to membrane   | signaling (receptor)    |
| ı  | 1000                    | NM_007458   | 11771          | Kcnh2       | membrane fraction;voltage-gated  | lon channel             |
| ı  |                         |             | 18709          | Ap2a1       | AP-2 adaptor complex;clathrin co   | transport               |
|    |                         | AF 133300   |                | Pik3r2      | phosphoinositide 3-kinase comple   | signaling               |
|    | THE COLUMN TWO IS NOT   |             | 259102         | Olfr630     |  | signaing (receptor)     |
| ŀ  |                         |             | 66902          | Mtap        |  | misc                    |
| Ļ  |                         | AB039178    | F0040          |             |  | unknown                 |
| -  | <u> </u>                | NM_016813   | 53319          | Nxf1        | nuclear pore   | transport               |
| ı  |                         | NM_025706   | 66687          | Tbc1d15     | extrachromosomal circular DNA  | unknown                 |
|    | 1                       | NM_026217   | 67526          | Apg12l      | cytoplas m   | protein degradation     |
| ١  |                         | NM_011857   | 23965          | Odz3        | integral to plasma membrane  | unknown                 |
| ١  |                         | AK007831    | 68115          |             |  | unknown                 |
| 1  |                         | AK015402    | 74862          |             |  | unknown                 |
|    | 210 50                  |             | 72088          | Ush1c       | cilium   | protein degradation     |
| 1  |                         | NM_019512   | 56070          | Tcerg1      | nuclear matrix   | transcription           |
|    | 100                     | AK016000    | 56428          | Mtch2       | membrane   | Transport               |
|    |                         | AK007097    | 14051          | Eya4        | cytoplasm  | metabolism              |
|    |                         | ] NM_010765 | 17165          | Mapkapk5    | calcium-calmodulin-dependent pro   | signaling               |
|    |                         | AK013003    | 67610          |             | membrane   | transport               |
|    |                         | NM_022995   | 65112          |             | Integral to membrane   | misc                    |
|    | 1.00                    | NM_013617   | 18366          | Olfr65      | Integral to plasma membrane  | signaling (receptor)    |
|    | 74.                     | AK016865    | 71164          | Zdhhc20     |  | unknown                 |
|    |                         | AK017531    | 73998          | Herc3       |  | unknown                 |
|    |                         | NM_053190   | 94226          | E dg8       | Integral to membrane; plasma memb  | signaling (receptor)    |
|    |                         | AK014863    | 70853          |             |  | unknown                 |
|    |                         | NM_019443   | 54405          | Ndufa1      | extracellular space; mitochondrio  | metabolism              |
|    |                         | NM_009131   | 20256          | Scgf        | extracellular space  | signaling (secreted)    |
|    |                         | AK006889    | 73410          |             |  |                         |
|    |                         | AK008988    | 70285          |             |  | unknown                 |
|    |                         | NM_008171   | 14812          | Grin2b      | extracellular space; integral to   | translation             |
|    |                         | AK009957    | 69692          | OTHILD      | execution operating at w   | Signaling (receptor)    |
|    |                         | NM_033561   | 22384          | Wbscr1      | cytosol  | unknown                 |
|    |                         | NM_009437   | 22117          | Tst         | mitochondriai matrix   | tra ns la tion          |
|    |                         | NM_011104   | 18754          | Prkce       | cytos keleton  | metabolism              |
|    |                         | NM_008731   | 1B167          | Npy2r       | integral to plasma membrane  | signaling               |
|    |                         | AK020702    | 78428          |             |  | signaling (body weight) |
|    | وهد.<br>فاضا فراوورا    |             | 68563          | Dpm3        | endoplasmic reticulum;integral t   | unknown                 |
|    |                         | NM_029716   | 108699         | Chn1        |  | meta bolis m            |
|    | 1 70 miles + 00         | NM_026235   | 67557          | CHIT        | cytoplasm  | signaling               |
|    |                         | NM_022813   |                | Scamp2      | nucleus;viral nucleocapsid   | unknown                 |
|    |                         | NM_009171   |                |             | Integral to membrane;membrane fr   | transport               |
|    | ****                    | NM_021531   | 20425<br>59035 | S hmt1      | cytosol  | meta bolis m            |
|    |                         | AK019147    |                | Carm1       | viral nucleocapsid   | transcription           |
|    |                         | NM_021446   | 19084          | Prkar1a     | cAMP-dependent protein kinase co   | misc                    |
|    |                         |             |                | ORF11       | integral to membrane   | unknown                 |
|    |                         | AK004703    | 71733          | S us d2     | extracellular space; integral to   | cell adh                |
|    | 10 A                    |             | 74481          | 0 60 4      | nucleus  | transcription           |
|    |                         | NM_018887   | 56050          | Сур39а1     | endoplasmic reticulum;membrane;m   | metabolism              |
|    |                         | 2           |                |             |  |                         |



|                        |        |  |                                    | rigure 25            |
|------------------------|--------|--|------------------------------------|----------------------|
| ACCESS                 | Locus  | GENE                                   | LOCALIZATION                       | BIOLOGICAL FUNCTION  |
| NM_023893              |        |  |                                    |                      |
| AF 100956              |        | a lot                                  |                                    | unknown              |
| NM_010321              | 14711  | Gnmt                                   | endoplasmic redculum               | unknown              |
| NM_022992              | 65106  | Arl6ip5                                | Integral to membrane               | translation          |
| NM_007682              | 12616  | Cenpb                                  | chromosome-, pericentric region;   | transport            |
| AK003511               | 73724  | Mcee                                   |                                    | misc                 |
| NM_022022              | 63958  | Ube4b                                  | extracellular space; mitochondrio  | unknown              |
| M69293                 | 15902  | ldb2                                   | cytoplasmubiquitin ligase compl    | protein degradation  |
| NM_026437              | 67894  | IGDZ                                   | cytoplas metranscription factor c  | immune response      |
| 34.44.21.42.4          |        | Pop1                                   | extracellular                      | unknown              |
| NM_013481<br>NM_011936 | 12181  | Bop1                                   | extrachromosomal circular DNA      | transcription        |
| 1967                   | 26383  | Fto                                    |                                    | unknown              |
| NM_008129              | 14630  | Gclm                                   |                                    | misc                 |
| AK005311               | 66871  | Cpne8                                  | membrane                           | misc                 |
| AK013604               | 72880  |  |                                    | unknown              |
| NM_008142              | 14688  | Gnb1                                   | heterotrimeric G-protein complex   | signaling            |
| NM_029203              | 75199  |  | transcription factor complex       | transcription        |
| NM_022882              | 64898  | Lpin2                                  | nucleus                            | unknown              |
| NM_021401              | 58210  | Sectm1                                 | integral to plasma membrane        | Immune response      |
| AK016247               | 18640  | Píkfb2                                 | cytosol                            | me ta bolis m        |
| NM_013826              | 17434  | Mocs2                                  |                                    | misc                 |
| NM_009624              | 11515  | Adcy9                                  | integral to plasma membrane        | misc                 |
| AK010898               | 72320  |  |                                    | unknown              |
| BC002306               | 245841 | Polr2h                                 | DNA-directed RNA polymerase I co   | transcription        |
| AK019803               | 78217  | ······································ |                                    | unknown              |
| NM_019639              | 22190  | Ubc                                    | nucleus                            | protein degradation  |
| AK019985               | 77521  |  | non-muscle myosin                  |                      |
| NM_018776              | 54394  | Crlf3                                  | membrane /                         | signaling            |
| AK014408               | 74315  | 01110                                  | membrane /                         | signaling (receptor) |
| NM_023336              | 67382  | Brd3                                   | Integral to mambre a consolers     | tumor related        |
| AK005740               | 74215  | DIQJ                                   | Integral to membrane; nucleus      | signaling ?          |
| AK006539               | 27660  |  |                                    | protein degradation  |
| NM_026616              | 68209  |  |                                    | unknown              |
| NM_009237              |        | <u> </u>                               | ribosome                           | unknown              |
|                        | 20675  | S ox3                                  | transcription factor complex       | transcription        |
| AK017761               | 70619  |  |                                    | unknown              |
| NM_013584              | 16880  | Lifr                                   | extracellular space; integral to   | signaling (receptor) |
| BC013471               | 77056  |  | Integral to membrane               | lipid metabolism?    |
| AK009886               | 71923  |  |                                    | unknown              |
| NM_011601              | 21893  | Tlm                                    | extracellular;integral to membre   | tumor related        |
| AK007994               | 72042  | Cotl1                                  | cytos keleton                      | ctsk                 |
| AK008761               | 74257  | Fbxo23                                 | integral to membrane               | unknown              |
| AF 285590              | 73679  | Tex19                                  |                                    | unknown              |
| NM_031156              | 15925  | lde                                    | extracellular space; peroxis ome;s | protein degradation  |
| MNM008443              | 16568  | Kif3a                                  | kinesin complex                    | ctsk                 |
| AK005989               | 71853  | Txndc7                                 | endoplasmic reticulum; extracellu  | metabolism           |
| NM_019657              | 56348  | Hsd17b12                               | integral to membrane; microsome    | metabolism           |
| L38281                 | 16365  | lrg1                                   |                                    | unknown              |
| BC013800               | 67063  |  |                                    |                      |
| NM_025529              |        | Nudt8                                  | mitochondrion                      | unknown              |
| AB047323               |        |  | The Great Part (CI)                | unknown              |
| NM_020558              | 57316  | C1d                                    | transcriptional topross as a pro-  | unknown              |
| AK015921               | 75209  | Sv2c                                   | transcriptional repressor comple   | transcription        |
| NM_008852              |        | Pitx3                                  | synaptic vesicle                   | misc                 |
| NM_007637              |        |  | transcription factor complex       | transcription        |
| NM_013666              |        | Cct5                                   | chaperonin-containing T-complex    | translation          |
|                        |        | S lat8e                                | Golgi apparatus; integral to memb  | translation          |
| INM_009155             | 20363  | Sepp1                                  | extracellular space                | misc                 |



| .4   |                    |                |               |  | Figure 26                      |
|--|--------------------|----------------|---------------|--|--------------------------------|
| ·  | ACCESS             | Locus          | GENE          | LOCALIZATION                             | BIOLOGICAL FUNCTION            |
| ASP'S NV   | 1_016849           | 54131          | Irf3          | cytoplasm;nucleus                        | transcription                  |
| NN   | 1_008082           | 14427          | Galr1         | Integral to membrane; plasma memb        | signaling (receptor)           |
| NV NV  | 1_008129           | 14630          | Gclm          |  | misc (receptor)                |
| AK   | 017270             | 237943         |               |  | unknown                        |
| AK   | 012969             | 74200          |               | ribulose bisphosphate carboxylas         |                                |
| NN.  | 1_013895           | 30055          | Timm9         | mitochondrial inner membrane pre         | unknown                        |
| AK AK  | 011544             | 66254          |               |  |                                |
| 海袋县 NN   | 1_008923           | 19085          | Prkar1b       | cAMP-dependent protein kinase co         | transcription<br>signaling     |
| AK AK  | 016397             | 66362          |               |  | transcription                  |
| NN E   | /_023153           | 66070          |               | membrane                                 | unknown                        |
|  | /I_007638          | 12468          | Cct7          | cytoplasm                                | translation                    |
| NA NA  | <b>/</b> _008855   | 18751          | Prkcb         |  | signaling                      |
| BC   | 002307             | 27878          | D1Ertd251e    |  | transcription                  |
| NN.  | /I_008885          | 18858          | Pmp22         | extracellular space;integral to          | cell cycle                     |
| The state of the s | 008803             | 72281          | Sh2d4a        |  | signaling ?                    |
| NN NN  | /I_021537          | 59041          | Stk25         |  | signaling                      |
| Carrier Water  | 003653             | 68644          | Dorz1         | extracellular space                      | metabolism                     |
| (A) A (A)  | <u>/_033269</u>    | 12671          | Chrm3         | integral to plasma membrane              | signaling (receptor)           |
|  | A_016757           | 22377          | Wbp1          | Integral to membrane                     | unknown                        |
|  | A_009861           | 12540          | Cdc42         | filopodium                               | signaling                      |
|  | A_025748           | 66757          | Deadc1        | mitochondrion                            | mlsc                           |
| Contract to the second   | 002297             | 71667          |               |  | unknown                        |
|  | A_029583           |                |               |  | unknown                        |
| 1  | 007130             | 73582          |               |  | unknown                        |
|  | M_026253           | 67580          |               | cytoplasm                                | unknown                        |
| The second second second   | M_021550           | 59048          |               | Integral to membrane                     | unknown                        |
|  | M_019572           | 56233          | Hdac7a        | cytoplasm;histone deacetylase co         | transcription                  |
|  | M_009632           | 11546          | Adprtl2       | nucleus; telomere                        | misc                           |
|  | 006145             | 75642          |               | Integral to membrane                     | unknown                        |
|  | 005166             | 76500          |               |  | signaling                      |
|  | 006807             | 74271          | <b>W</b>      |  | unknown                        |
|  | M_030716           | 80906          | Kcnlp2        | plasma membrane                          | ion channel                    |
| for a state of the last  | (016622<br>(014709 | 74438          | 400044010000  |  | unknown                        |
|  | 013202             | 74585          | 4833416109Rik |  | unknown                        |
|  | V_019686           | 20467<br>56506 | S in3b        | nucleus                                  | transcription                  |
|  | VI_025747          | 66756          |               | synaptic vesicle                         | signaling                      |
| response is an out in  | V_011597           | 21873          | TJp2          |  | unknown                        |
|  | V_021453           | 58803          | 1)192         | nucleus; tight junction                  | cell adh                       |
|  | V_009781           | 12288          | Cacna1c       | extracellular space; soluble frac        | protein degradation (secreted) |
|  | (011832            | 72465          | Zfp131        | T-tubule;voltage-gated calcium c         | ion channel                    |
| Professor met read   | V_028075           | 72049          | Tnfrsf13c     | Integral to management                   | trains port                    |
|  | (013280            | 67229          | 111131130     | Integral to membrane spliceosome complex | signaling (receptor)           |
| Accepted to an electrication   | M_019550           | 56195          | Ptbp2         | spliceosome complex                      | transcription                  |
|  | (003818            | 66248          | Alg5          | endoplasmic reticulum;integral t         | transcription                  |
| Partie Condensed   | (006263            | 54613          | Siat10        | Golgi apparatus;membrane                 | metabolism                     |
|  | M_053161           | 94064          | MrpI27        | mitochondrial large ribosomal su         | misc                           |
|  | (005160            | 72014          |               | extracellular space                      | translation                    |
| AK AK  |                    | 28027          | D4Wsu132e     |  | unknown                        |
| ME SHE NO  | VI_026612          | 68198          | Ndufb2        | mitochondrion                            | unknown                        |
| MY TEL AK  | (007552            | 56036          | Ccnl2         |  | transport<br>cell cycle        |
|  | M_025937           | 67050          |               | integral to endoplasmic reticulu         | unknown                        |
| NI NI  | M_007889           | 13544          | Dvl3          | cytoplasm                                | signaling                      |
| AF   | 104414             | 16798          | Lats1         |  | signaling ?                    |
| , NI   | M_029417           | 75757          |               |  |                                |
| AA ET  | (002744            | 68375          | Ndufa8        | respiratory chain complex I (sen         | metabolism                     |
| BC BC  | 002178             | 93747          | E chs1        | mitochondrion                            | metabolism                     |
| NI NI  | M_016798           | 53318          | P dlim3       | Z disc;actin cytoskeleton                | ctsk                           |
| NI SEPTEMBER   | M_008040           | 14290          | Fpr-rs3       | Integral to membrane                     | signaling (receptor)           |
| CONTRACTOR N   | M_013859           | 29805          | ORF6          |  | unknown                        |
| BO   | 012407             | 110695         | Aldh7a1       |  | metabolism                     |
|  |                    |                |               |  | e DUISTR                       |



| 7.        |                |             |  |                      |
|-----------|----------------|-------------|--|----------------------|
| ACCESS    | LOCUS          | GENE        | LOCALIZATION   | BIOLOGICAL FUNCTION  |
| NM_022321 | 64099          | Parvg       | cytos keleton  | cell adh             |
| AK009960  | 69697          |             |  | unknown              |
| NM_02153  | 59035          | Carm1       | viral nucleocapsid                                       | transcription        |
| AK018599  | 22353          | VIp         | extracellular space                                      | signaling (secreted) |
| NM_02617  |                | Sf3a1       | spliceosome complex                                      | transcription        |
| AK019538  | 78092          |             | integral to membrane                                     | unknown              |
| X84014    | 16774          | Lama3       | basal lamina; mitochondrial inner                        | cell adh             |
| AK009365  | 76437          | D11Bwg0414e |  | unknown              |
| NM_01154: |                | Skp1a       | SCF ubiquitin ligase complex;nuc                         | translation          |
| AK007452  | 69082          |             |  | signaling            |
| AK012711  | 69226          | Snx24       | cytoplas m   | transport            |
| AK003808  | 224250         |             | integral to membrane                                     | unknown              |
| NM_013730 |                | Tceb3       | nucleus  | transcription        |
| NM_01128  |                | Mrpl23      | mitochondrial large ribosomal su                         | translation          |
| AK003337  | 106039         | Gga1        | G olg) stack   | transport            |
| AF061934  | 68490<br>50782 | Doc11       |  | unknown              |
| AK017628  | 70556          | Rgs11       | heterotrimeric G-protein complex                         | signating            |
| AK004012  | 68708          | <del></del> | mitochondrial inner membrane                             | trans port           |
| AK019590  | 78154          |             | early endosome   | tumor related        |
| AK014623  | 66701          |             |  | unknown              |
| NM_02618  |                | <del></del> | Into and to many   | unknown              |
| NM_01368  |                | Tbp         | Integral to membrane                                     | unknown              |
| NM_05310  |                | Gpr45       | RNA polymerase I transcription f<br>integral to membrane | trans cription       |
| AK012292  | 72561          | Оргчо       | integrar to membrane                                     | signaling (receptor) |
| AK003623  | 74772          |             | Integral to membrane                                     | immune response      |
| AK017309  | 71382          | Pex1        | megrar w memorane  | transport            |
| NM_01675  |                | Lxn         | Integral to membrane                                     | trans port           |
| AK020352  | 78242          | LAN         | extracellular  | misc                 |
| AK021301  | 78578          |             | CAUDCEIMIG.  | protein degradation? |
| NM_00850  |                | Ligih       | cytoskeleton   | unknown<br>ctsk      |
| AB052945  | 109904         | Mcf2        | cytosol  | signaling (GEF)      |
| AK021396  | 78550          |             |  | unknown              |
| NM_01675  | 4 17907        | Mylpf       | muscle myosin  | csk                  |
| AK014993  | 70961          |             |  | unknown              |
| NM_01026  | 4 14536        | Nr6a1       | transcription factor complex                             | transcription        |
| NM_00926  | 2 20745        | S pock1     | extracellular matrix;extracellul                         | ecm                  |
| NM_00880  | 9 18596        | Pdgfrb      | extracellular space; integral to                         | signaling (receptor) |
| AK010555  | 69746          |             |  | unknown              |
| AF 267660 | 18604          | P dk2       | mitochondrion  | metabolism           |
| NM_02134  |                | Zfp318      | membrane;nucleus   | c/s/k                |
| AK016873  | 71192          |             |  | signaling?           |
| AK018222  | 76161          |             | integral to membrane                                     | unknown              |
| NM_02617  |                | Lysal1      | integral to GolgI membrane;lysos                         | metabolism           |
| AK019621  | 78796          |             |  | Transcription        |
| NM_01576  |                | Txnrd1      | cytosol  | transport            |
| BC004653  | 67155          |             | nucleoplasm  | transcription        |
| AK014178  | 56738          | Mocs 1      |  | unknown              |
| AK005519  | 67701          | 14.5.       | extracellular space                                      | protein degradation  |
| NM_01992  |                | Kik4        | extracellular space                                      | protein degradation  |
| NM_00884  |                | Pip5k2a     | cytoplasm  | lipid metabolism     |
| NM_01680  |                | S dcbp      | adherens junction;cytoskeleton;l                         | s I gna ling         |
| AK019434  | 28040          | D6Wsu163e   |  | unknown              |
| NM_02551  |                | A           | cytoplasm  | unknown              |
| AK011231  | 72068          | C not2      | membrane   | tra ns cription      |
| (2) (2)   |                |             |  |                      |

| Figure 28 | BIOLOGICAL FUNCTION | unknown                          | ctsk                 | lipid metabolism             | protein degradation | unknown                         | илклоwп                         | unknown       | ranscription | transport    | transcription         | ctsk        | signaling | protein degradation | misc     | transport | ctk                              | unknown | stgnallng                       | unknown | unknown   | Signaling (receptor)             | signaling (receptor) | protein degradation | transcription                 | transcription                 | translation | unknown  | unknown              | meta bolis m | signaling?      | unknown  | Immune response |
|-----------|---------------------|----------------------------------|----------------------|------------------------------|---------------------|---------------------------------|---------------------------------|---------------|--------------|--------------|-----------------------|-------------|-----------|---------------------|----------|-----------|----------------------------------|---------|---------------------------------|---------|-----------|----------------------------------|----------------------|---------------------|-------------------------------|-------------------------------|-------------|----------|----------------------|--------------|-----------------|----------|-----------------|
|           | LOCALIZATION        | inner plaque of spindle pole bod | membrane;microtubule | extracellular space;lysosome |                     | extracellular space;integral to | extracellular space;integral to | mitochondrion | nucleoplasm  | cytoskeleton | mitochondrion;nucleus | septin ring | cytoplasm | nucleus             | uncleus  | cytoplasm | inner plaque of spindle pole bod |         | extracellular space;integral to | nucleus |           | cell surface;intagral to membran |                      | cytoplasm           | trans cription factor complex | trans cription factor complex |             |          | integral to membrane |              | plasma membrane |          | extracellular   |
|           | GENE                |                                  |                      | Lip1                         | Usp20               |                                 | Fgfr4                           | Nudt8         | R ybp        |              | Mrps31                | 90-des      | Scap2     | Rnf13               | 0box1    | Pitpnb    |                                  |         | Cull                            | Son     |           | Tremi1                           | Rxrip110             | Оррз                | En1                           | Sp3                           |             |          | Tm7sf2               | Osbpl7       | Kcnip4          |          | 1118            |
|           | rocus               | 67841                            | 73710                | 16889                        | 74270               | 67149                           | 14186                           | 66387         | 56353        | 77048        | 57312                 | 56526       | 54353     | 24017               | 71468    | 56305     | 69435                            | 69929   | 12794                           | 20658   | 66268     | 71326                            | 20184                | 75221               | 13798                         | 20687                         | 70465       |          | 73166                | 71240        | 80334           | 74090    | 16173           |
|           | ACCESS              | NM_026402                        | AK010786             | NM_021460                    | AK006800            | NM_025998                       | NM_008011                       | NM 025529     | NM 019743    | AK015007     | NM_020560             | NM_019942   | NM_018773 |                     | AK018362 | NM_019640 | AK006283                         | 4       | NM_009920                       | 1       | NM_025457 | AK017256                         |                      | BC004600            | NM_010133                     | ı                             |             | AK009205 |                      | AK017095     | NM_030265       | AK002481 | NM 008360       |
|           | 0.3                 |                                  |                      |                              |                     |                                 |                                 | III           |              |              |                       |             |           |                     |          |           |                                  |         | _                               |         | _         |                                  |                      |                     |                               |                               |             |          |                      |              | £               |          |                 |

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| AKO1836 F387 BIOLOGICAL FUNCTION  BIOLOGICAL FUNCTION  Washington to plasma membrane  Vansport   |
|--|
| NM_01244   |
| NM_011244  |
| L20343   12296   Cacnb2   voltage-gated calcium channel co   Indicated   Ind   |
| NM_011971 26446  |
| AK021336 77994    MM_018882 14766   Gpr56   extracellular space; integral to   signaling (receptor)  |
| NM_01882 14766   Gpr56   extracellular space; Integral to   signaling (receptor)   |
| NM_016910 53892   Ppm1d   protein serine-threonine phospha   signaling   receptor  |
| AK016704 74434 extracellular cell cycle 7  NM_007703 12686 E lov/3 endoplas mic reticultum; integral t lipid metabolis m  NM_018826 54352 Irx5 nucleus transcription  NM_018826 54352 Irx5 nucleus transcription  UNM_019802 56316 Ggcx Integral to membrane misc  NM_019802 56316 Ggcx Integral to membrane misc  NM_019925 56696 Gpr132 Integral to plasma membrane signaling (receptor)  NM_020025 26878 B3galt2 Golgi apparatus; integral to memb translation  NM_016766 51812 Mcrs1 nucleus cell cycle  NM_010431 15251 Hif1a flagellum (sensu E ukarya); transc angiogenesis  AK010552 66984 unknown  AK019168 68991 membrane signaling  NM_008538 17118 Marcks membrane signaling   |
| NM_007703 12686  |
| NM_018826 54352   Irx5   nucleus   transcription   |
| AK003154 68420   |
| NM_019802 56316  |
| NM_008821 18630   Pet2   extractromosomal circular DNA   transcription   |
| NM_019925 56696   Gpr132   Integral to plasma membrane   signaling (receptor)  |
| NM_020025 26878 B3galt2 Golgl apparatus; Integral to memb translation   NM_016766 51812 Mors1   nucleus   cell cycle     AK021023 78688 Noi3   nucleus   apoptos b     NM_010431 15251 Hif1a   flagellum (sensu Eukarya); transc   angiogenesis     AK010552 66984   unknown     AK018027 277250   unknown     AK019168 68991   membrane   unknown     NM_008538 17118   Marcks   membrane   signaling   |
| NM_016765 51812   Mers 1   nucleus   cell cycle  |
| AK021023 78688 Nol3 nucleus apoptos ls  NM_010431 15251 Hiffa flagellum (sensu E ukarya); transc anglogenes is  AK010552 66984 umknown  AK018027 277250 umknown  AK019168 68991 membrane unknown  NM_008538 17118 Marcks membrane signaling  |
| NM_010431 15251 Hif1a   flagellum (sensu Eukarya);transc   anglogenasis  |
| AK010552 66984 unknown  AK018027 277250 unknown  AK019168 68991 membrane unknown  NM_008538 17118 Marcks membrane signaling  |
| AK018027 277250 unknown AK019168 68991 membrane unknown NM_008538 17118 Marcks membrane signaling  |
| AK019168 68991 membrane unknown  |
| MM_008538 17118 Marcks membrane signaling  |
| 1 THE PROPERTY OF A PARTIE AND  |
| UNKDOWD  |
| 高級機能   |
| Same NM_020518 57276   Integral to plasma membrane   Immune response (receptor)  |
| 10279 Bcr unknown  |
| NM_011444 20678 Sox5 transcription factor complex transcription  |
| 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1  |
| NM_010309 14683 Gnas Golgl trans cisterna; membrane fr signaling   |
| AB042402 14695 Gnb3 heterotrimeric G-protein complex misc  |
| NM_008030 14262 Fmo3 extracellular space; Integral to traffic  |
| NM_009983 13033 Ctsd extracellular space;lysosome protein degradation  |
| AY007717 70603 Mutyh extrachromosomal circular DNA misc  |
| PC00225 10C244 DC4   |
| NM 007542 12111 Rgm  |
| <b>展展 2                                  </b>  |
| AK010038 269587 F ph4 1  |
| BC004098 192287  |
| United the Health of the Healt |
| 1 4 1 1 1 AK017214 71323   |
| AK017214 71323 tumor related   |
| AK017214 71323 tumor related  NM_009035 19664 R bpsuh cytoplasm;nucleus immune response  |
| AK017214 71323 tumor related NM_009035 19664 R bpsuh cytoplasm;nucleus immune res porse AK013604 72880 unknown   |
| AK017214 71323   tumor related   |
| AK017214 71323 tumor related NM_009035 19664 R bpsuh cytoplasm;nucleus immune response AK013604 72880 unknown  AK019479 unknown  MM_009083 19737 R gs5 signaling   |
| AK017214 71323   tumor related   NM_009035 19664 R bpsuh   cytoplasm;nucleus   immune res porse  |
| AK017214 71323   tumor related     NM_009035 19664 R bpsuh cytoplasm;nucleus   immune response     AK013604 72880   unknown     AK019479   unknown     MM_009083 19737 R gs5   signaling     AK020831 77794   unknown     MM_009895 12700 C ish cytoplasm;plasma membrane   signaling     AK009344 76948   unknown     MM_009895 12700 C ish cytoplasm;plasma membrane   unknown   |
| AK017214 71323   tumor related   |
| AK017214 71323 tumor related  NM_009035 19664 R bpsuh cytoplasm;nucleus immune response  AK013604 72880 unknown  AK019479 unknown  NM_009083 19737 R gs5 signaling  Unknown  AK020831 77794 unknown  Unknown  Signaling  Unknown  NM_009895 12700 C ish cytoplasm;plasma membrane signaling  Unknown  NM_030735 81010 V3R9 integral to membrane signaling (receptor)   |
| AK017214 71323 tumor related  NM_009035 19664 R bpsuh cytoplasm;nucleus immune res porse  AK013604 72880 unknown  AK019479 unknown  NM_009063 19737 R gs5 signaling  AK020831 77794 unknown  NM_009895 12700 C ish cytoplasm;plasma membrane signaling  AK009344 76948 unknown  NM_0030735 81010 V3R9 integral to membrane signaling (receptor)  AK002465 71675 unknown  |
| AK017214 71323   tumor related   |
| AK017214   71323   tumor related   |
| AK017214 71323   tumor related   |
| AK017214   71323   tumor related   |
| AK017214   71323   tumor related   |
| AK017214   |
| AK017214   71323   tumor related   |
| AK017214   71323   tumor related   |
| AK017214   71323   tumor related     NM_009035   19664   R bpsuh   cytoplasm;nucleus   Immune response   unknown   unknown     Immune response   unknown   unknown     Immune response   unknown   unknown     Immune response   unknown   unknown   Immune response   Immune re   |
| AK017214   71323   |
| AK017214   |
| AK017214   |
| AK017214   |

BNS-18 BNS-72 BNS-192 BS-18 BS-72 BS-192

|            | ACCESS                   | ACCESS LOCUS GENE | GENE     | LOCALIZATION                    | BIOLOGICAL FUNCTION |
|------------|--------------------------|-------------------|----------|---------------------------------|---------------------|
| A STATE OF | AK015988 75146           | 75146             |          |                                 | unknown             |
|            | AK009436 67345           | 67345             |          | voltage-gated potassium channel | unknown             |
|            | NM_021449 58799 AF229032 | 58799             | AF229032 | mitochondrion                   | unknown             |
|            | NM_008683 18002 Nedd8    | 18002             | Nedd8    | nucleus;rlbosome                | protein degradation |

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| BIOLOGICAL FUNCTION | apoptosis       | cisk   | signaling (receptor) | ransport                    | unkriown | unknown         | mlsc            | ECM             |
|---------------------|-----------------|--------|----------------------|-----------------------------|----------|-----------------|-----------------|-----------------|
|                     | e; mitochondri  |        | integral to membrane | integral to plasma membrane | 1        | ribasome        | mitochondrłon   |                 |
| GENE                | Вах             | Kifap3 | Hrh1                 | Sic6a1                      |          |                 | Llas            | Col4a3bp        |
| rocus               | 12028           | 16579  | 15465                | 232333                      | 71564    | 66492           | 79464           | 68018           |
| ACCESS LOCUS        | NM_007527 12028 | D50366 | NM_008285 15465      | L32178                      | AK018541 | NM_025594 66492 | NM_024471 79464 | NM 023420 68018 |
|                     |                 |        |                      |                             |          |                 |                 | 100 - 100       |

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|                     |   |      |                           | Figure 29-3         |
|---------------------|---|------|---------------------------|---------------------|
| ACCESS LOCUS GENE   | rocus                                   | GENE | LOCALIZATION              | BIOLOGICAL FUNCTION |
| £90600 <sup>-</sup> | _009063 19737 Rgs5                      | Rgs5 |                           | signaling           |
| 019479              |   |      |                           | ипкломп             |
| 020831 77794        | 77794                                   |      |                           | ипклоwп             |
| L_009895 12700 Cish | 12700                                   | Cish | cytopias mplasma membrane | signaling           |
|                     | *************************************** |      |                           |                     |

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| Figure 29-4 |
|-------------|
|             |

|   | ļ                   | ١               | 1              | 1                              | 1                                | 1          | 1        | 1                               | 1                    | 1                                | ı                               | ١                            | ]                             |
|---|---------------------|-----------------|----------------|--------------------------------|----------------------------------|------------|----------|---------------------------------|----------------------|----------------------------------|---------------------------------|------------------------------|-------------------------------|
| ı | BIOLOGICAL FUNCTION | transcription   | unknown        | protein degradation (secreted) | signaling                        | unknown    | unknown  | signaling (receptor)            | misc                 | cell cycle                       | ecm                             | protein degradation          | misc                          |
|   | LOCALIZATION        | nucleus         |                | extracellular space            | protein serine-threonine phospha |            |          | extracellular space;integral to | integral to membrane | DNA replication factor C complex | extracellular matix;extracellul | extracellular space;lysosome | extrachromosomal circular DNA |
|   | GENE                | lrx5            |                | Ahsg                           | Ppm1d                            | Bcr        |          | Gpr56                           | Ggcx                 | Rfc4                             | Bgn                             | Ctsd                         | Mutyh                         |
|   | LOCUS               | 54352           | 68420          | 11625                          | 53892                            | 110279 Bcr | 73572    | 14766                           | 56316                | 106344                           | ı                               | 13033                        | 70603                         |
|   | ACCESS LOCUS GENE   | NM_018826 54352 | AK003154 68420 | NM_013465 11625                | NM_016910 53892                  | BC002193   | AK007077 | NM_018882 14766                 | NM_019802 56316      | BC003335                         | NM_007542 12111                 | NM_009983                    | AY007717                      |
|   |                     |                 |                |                                |                                  |            | ۲-<br>ا  |                                 |                      | 1                                |                                 |                              |                               |
|   |                     | \$:             |                |                                |                                  | 7          |          | ]                               | 11.                  | : ,: <u>.</u>                    | _                               |                              | <br>i                         |
|   | _                   |                 | ! "-           |                                |                                  | <br>       |          |                                 |                      |                                  | 3                               |                              |                               |

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|             | Ì                   |          | -              | 1               | 1                  |                             |                                  |                                  | 1              | 1                                |                                 |                                  |                              |                             | ١              |
|-------------|---------------------|----------|----------------|-----------------|--------------------|-----------------------------|----------------------------------|----------------------------------|----------------|----------------------------------|---------------------------------|----------------------------------|------------------------------|-----------------------------|----------------|
| Figure 29-5 | BIOLOGICAL FUNCTION | unknown  | unknown        | signaling       | ctsk?              | transport                   | signaling (receptor)             | protein degradation              | unknown        | signaling                        | traffic                         | misc                             | transcríption                | Immune response (receptor)  | unknown        |
|             | LOCALIZATION        | membrane |                | membrane        | actin cytoskalaton | integral to plasma membrane | extrachromosomal circular DNA;nu | proteasome core complex (sensu E |                | Golgi trans clsterna;membrane fr | extracellular space;integral to | heterotrimente G-protein complex | transcription factor complex | integral to plasma membrane |                |
|             | GENE                |          | D28wg0891e     | Marcks          |                    | S lc38a3                    | Rarg                             | Psmb3                            |                | Gnas                             | <b>F</b> то3                    | Gnb3                             | Sox5                         |                             |                |
|             | rocus               | 68991    | 52840          | 17118           | 67722              | 76257                       | 19411                            | 26446                            | 77994          | 14683                            | 14262                           | 14695                            | 20678                        | 57276                       | 73572          |
|             | ACCESS LOCUS GENE   | AK019168 | AK003735 52840 | NM_008538 17118 | NM_026338 67722    | -INM_023805 76257           | NM_011244 19411                  | NM_011971 26446                  | AK021336 77994 | NM_010309 14683                  | NM_008030 14262                 | AB042402                         | NM_011444 20678              | NM_020518 57276             | AK007077 73572 |
|             |                     | PH       |                |                 |                    |                             | F                                | 4.                               | TINE I         |                                  |                                 |                                  |                              | 1                           |                |
|             |                     | 100      |                |                 |                    |                             | C Mark - to                      | H                                |                | -                                | 10.10                           |                                  |                              |                             |                |

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| Figure 29-6 | BIOLOGICAL FUNCTION | transport                    | unknown  | immune response    |                 |
|-------------|---------------------|------------------------------|----------|--------------------|-----------------|
|             | LOCALIZATION        | mbochondrial finner membrane |          | cytoplasm; nucleus |                 |
|             | GENE                |                              |          | 09035 19664 Rbpsuh |                 |
|             | rocus               | 192287                       | 72880    | 19664              |                 |
|             | ACCESS LOCUS GENE   | BC004098                     | AK013604 | NM_009035          |                 |
|             |                     |                              | L        | -                  | 82-72<br>BS-192 |
|             |                     |                              |          | ;<br>              | 81-28<br>81-28  |
|             |                     |                              | Ĭ        | 1                  | 8NS-72          |
| Г           | T <sup>3</sup>      | **************               | ****     | <u> </u>           | 1 00 0110       |
| gel.        | 0.1 0.1 0.3         | .og <sub>2</sub> (ratio)     |          |                    |                 |
|             | - <del>.</del> .    | Log                          |          |                    |                 |
|             | . O.                |                              |          |                    |                 |

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|  | ACC          | ACCESS | Locus  | GENE       | LOCALIZATION                       | BIOLOGICAL FUNCTION |
|--|--------------|--------|--------|------------|------------------------------------|---------------------|
|  | INM OUTRES   | 7863   | 13384  | Mon3       | Integral to plasma membrane        | signaling           |
| The state of the s | AF162781     |        | 16332  | Inppl1     |                                    | signaling           |
|  | NM 016871    | 16871  | 53333  | Tomm40     | integral to membrane; mitochondri  | traffic             |
| e de la companya de l | NM 011176    | 1176   | 19143  | Sr14       | extracellular, extrins ic to plasm | celladh             |
| <u> </u>   | RC013716     | 716    | 15499  | Hsf1       | cytoplasmuncleus                   | transcription       |
|  | AK003586     | 586    | 231712 |            |                                    | unknown             |
|  | NM 007966    | 27966  | 14028  | Evx1       | transcription factor complex       | transcription       |
|  | NM 023422    | 23422  | 68024  | Hls t1h2bc | nucleosome;nucleus                 | misc                |
|  | NM 026413    | 26413  | 67854  | Stco6b1    | integral to membrane               | transport           |
|  | AK011354     | 354    | 67041  | Oxct       | extracellular space; mitochondrio  | metabolism          |
| ]<br>  | AK012054     | 954    | 72519  |            | eukaryotic translation initiatio   | unkrown             |
|  | NM 011638    | 11638  | 22042  | 計          | endosome;integral to membrane;pl   | signaling           |
|  | AK003826     | 826    | 68530  |            |                                    | unknown             |
|  | NM 008492    | 38492  | 16832  | Ldh2       | cytosol                            | metabolism          |
| ' '<br> - je<br>   | AK005386     | 386    | 72008  |            | endosome                           | transport           |
| Control of the State of the Sta | NM 021890    | 21890  | 60527  | Fads3      | integral to plasma membrane        | metabolism          |
| +  | AF327857     | 158    | 232288 |            |                                    | unknown             |
|  | NA 015776    | 15778  | 50530  | Mfap5      | extracellular space; microfibril   | ecm                 |
|  | AK019863     | 863    | 77634  |            |                                    | translation         |
| · Ì  | AF411608     | 89     | 76273  | Ndfip2     | integral to membrane               | unknown             |
|  | AK018731     | 15     | 68193  | R p124     |                                    | translation         |
| -  | NM 030248    | 30248  | 80280  | Cdk5rap3   |                                    | cell cycle          |
|  | AK003794     | 194    | 97541  | Qars       |                                    | translation         |
|  | AK002407     | 5      | 110826 | Etb        | electron transfer flavoprotein c   | transport           |
|  | NM 025577    | 25577  | 65462  |            | 1                                  | unknown             |
|  | NM_008939    | 38939  | 19142  | Prss12     | extracellular space;membrane       | protein degradation |
|  | AK017769     | 992    | 70614  |            |                                    | unknown             |
| 1200   | 12 NM 010181 | 10181  | 14119  | Fbn2       | extracellular space;microfibril    | signaling           |
|  | NM 008095    | 38095  | 14467  | Gbas       | extracellular space;mitochondrio   | unknown             |
| (2.3)  | 3 NM 053076  | 3076   | 20168  | Rm3        | endoplas mic reticulum extracellu  | unknown             |
|  | BC003237     | 237    | 98985  | A1462438   | nucleus                            | transcription       |
|  | NM 026069    | 6909   | 67281  | Rpl37      | cytosolic large ribosomal subuni   | translation         |
|  | NM 008857    | 38857  | 18759  | Prkcl      | plasma membrane                    | signaling           |
| 1  | BC005744     | 744    | 72144  | Slc37a3    | extracellular space;Integral to    | transport           |
| The state of the s | - NM_026267  | 26267  | 67602  |            | membrana                           | unknown             |

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## Figure 30 B

| 1  |   |                         |                |  | rigule 30 b                           |
|--|---|-------------------------|----------------|--|---------------------------------------|
|  | Access."                                      | そもとりず                   | GENE 3 /       | LOCALIZATION                                   | BIOLOGICAL FUNCTION                   |
| <b>建设设施设施</b>  |   | 75835                   |                |  |                                       |
|  | AK010113                                      | 70281                   |                | membrane                                       | signaling                             |
|  | NM_009478                                     | 22275                   | Urod           | ablesation                                     | unknown                               |
|  | NM_008947                                     | 19179                   |                | chloroplast                                    | misc                                  |
|  |   |                         | Psmc1          | proteasome complex (sensu Eukary               | protein degradation                   |
|  | AK01994B                                      | 78095                   |                |  | unknown                               |
|  | NM_023505                                     | 69367                   | Glrx2          | mitochondrion; nucleus                         | transport                             |
|  | NM_026513                                     |                         |                |  | unknown                               |
|  | NM_009186                                     | 20462                   | Silg41         |  | mlsc                                  |
| 3.28 2.14 E. Arch S  | NM_008825                                     | 18640                   | Pfkfb2         | cytosol  | metabolism                            |
|  | NM_009854                                     | 12516                   | Cd7            | extracellular space;integral to                | immune response (receptor)            |
|  | AK013837                                      | 73090                   |                |  | unknown                               |
|  | NM_009441                                     | 22129                   | Ttc3           | transcriptional repressor comple               | transcription?                        |
|  | NM_007462                                     | 11789                   | Арс            | cytoplasm;nucleus                              | tumor related (suppressor)            |
|  | NM_010064                                     | 13427                   | Dnclc2         | cytoplasmic dynain complex                     | ctsk                                  |
|  | NM_020031                                     | 56612                   | Pfdn5          | prefoldin complex                              | translation                           |
|  | AK004975                                      | 71770                   | Ap2b1          | clathrin adaptor complex; coated               | transport                             |
|  | NM_053178                                     | 94180                   |                | ote and despite our plant, code a              | · · · · · · · · · · · · · · · · · · · |
|  |   | 51885                   | D2Ertd435e     |  | metabolism?                           |
| The second secon | AF343752                                      | 77053                   | Unc84a         | Cutoplas militagral to mambas some             | ctsk                                  |
|  | NM_016750                                     | 51788                   | H2afz          | cytoplasm;integral to membrane;n               | unknown                               |
|  | BC005788                                      | 71994                   |                | nucleos ame; nucleus                           | cell cycle                            |
|  |   |                         | Cnn3           | cytos keleton                                  | ctsk?                                 |
|  | NM_030719                                     | 80909                   | Gats           |  | unknown                               |
|  |   | 23936                   | Lynx1          | extracellular space; integral to               | Signaling (receptor)                  |
|  | NM_018801                                     | 54525                   | S yt7          | Integral to membrane;lysosome;sy               | transport                             |
|  | NM_010234                                     | 14281                   | Fos            | cytoplasm;transcription factor c               | tumor related                         |
|  | NM_054046                                     | 23854                   | Def8           | extracellular                                  | signaling                             |
|  | NM_011042                                     | 18521                   | Pcbp2 .        | cytoplasm;nucleus;ribonucleoprot               | translation                           |
|  | NM_011018                                     | 18412                   | Sqstm1         | cytosol  | protein degradation                   |
|  | BC005674                                      | 142682                  | AA792890       |  | unknown                               |
|  | J05277  | 15275                   | Hk1            | cytosol;membrane;mitochondrion                 | metabolis m                           |
|  | AK008493                                      | 72098                   |                | cytosol;integral to membrane                   | metabolism                            |
|  | NM_009320                                     | 21366                   | Slc6a6         | Integral to plasma membrane                    | transport                             |
|  | NM_013918                                     | 30940                   | Usp25          | 26S proteasome;proteasome comple               | protein degradation                   |
|  | AK019147                                      | 19084                   | Prkar1a        | cAMP-dependent protein kinase co               | mise                                  |
|  | NM_019509                                     |                         |                |  | unknown                               |
|  | BC003457                                      | 108645                  |                | extrachromosomal circular DNA                  | misc                                  |
|  | NM_024244                                     | 71721                   |                | membrane                                       | unknown                               |
|  | NM_018798                                     | 54609                   | Ubgin2         | endoplasmic reticulum membrane                 | unknown                               |
|  | AK005132                                      | 72003                   | Synpr          | extracellular space; integral to               | <del></del>                           |
|  | NM_023868                                     | 20191                   | Ryr2           | integral to plasma membrane                    | transport                             |
|  | NM_007922                                     | 13712                   | Eik1           | membrane;nucleus                               | lon channel                           |
|  | AK008900                                      | 75685                   | us 1           |  | transcription                         |
|  | NM_026523                                     |                         | Neph           | avtracellular a pace                           | unknown                               |
|  | NM_020323                                     | 20418                   | Nmb<br>Sha2    | extracellular space                            | signaling (secreted)                  |
|  | NM_008596                                     |                         | Shc3           | cytoplasm                                      | signaling ,                           |
|  | BC004064                                      |                         | Mg29           | integral to membrane; synaptic ve              | unknown                               |
|  |   | 20682                   | Sox9           | transcription factor complex                   | unknown                               |
| 1933   |   | 74411                   | - W            | Integral to membrane                           | unknown                               |
| 1 - (558)  | NM_023500                                     |                         | Xkh            | extracellular space;integral to                | transport                             |
|  |   |                         | Lypia 2        | mitochondrion                                  | misc                                  |
|  | NM_016698                                     |                         | Rnf10          |  | transcription                         |
|  | NM_019771                                     |                         | Dstn           | actin cytoskeleton                             | cell cycle                            |
|  | AK007933                                      | 72282                   |                |  | นกใหางพา                              |
|  | NM_007950                                     |                         | É reg          | extracellular space; integral to               | cell cycle                            |
|  | NM_020494                                     |                         | Ddx24          | cytoplasm                                      | cell cycle                            |
| Little Mark  | NM_011529                                     | 21353                   | Tank           | cytoplasm                                      | signaling                             |
|  | AK012553                                      | 77015                   |                |  | unknown                               |
|  | AK003287                                      | 66264                   |                |  | unknown                               |
| PRICE BELL PROPERTY IN 18 AP . ST. Chi servery 183   | 1 BC 004062                                   | 234959                  | Crsp6          |  | transcription                         |
|  | 32  |                         |                |  | unknown                               |
|  | AK003282                                      | 00430                   |                |  |                                       |
|  |   | 66496<br>11652          | Akt2           | Intracellular:protein kinese CK2               | cell cycle                            |
|  | AK010511                                      | 11652                   | Akt2<br>Ndufs7 | Intracellular;protein kinase CK2               | cell cycle                            |
|  | AK010511<br>AK003132                          | 11652<br>75406          | Ndufs7         | extracellular space;mltochondrlo               | metabolism                            |
|  | AK010511<br>AK003132<br>NM_007871             | 11652<br>75406<br>13430 |                | extracellular space;mitochondrio<br>coated pit | metabolism<br>ctsk                    |
|  | AK010511<br>AK003132<br>NM_007871<br>AK003609 | 11652<br>75406          | Ndufs7         | extracellular space;mltochondrlo               | metabolism                            |

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| Figure 30-1 |  |
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|---------------------|-------------------|------------|----------------------|--------------------|-----------------|---|------------------------------------|----------------------------------|--------------|-----------|--------------|---------------|--|
| BIOLOGICAL FUNCTION | ranscription      | unknown    | signating (secreted) |                    | signaling       | 1 | ransport                           | ranslation                       |              | חאסמאחו   |              | Signoral      |  |
| LOCALIZATION        | membrane; nucleus |            | and the second       | exuacellulal space | cytoplasm       |   | integral to membrane; lysosome; sy | cytoplasm;nucleus;ribonucleoprot |              |           |              | extracellular |  |
| GENE                | F批1               |            |                      | Nmb                | Shc3            |   | Syt7                               | Pchn2                            |              | AA792890  |              | Def8          |  |
| COCUS               | 13712             | 75585      | 2000/                | 68039              | 20418           |   | 54525                              | 10521                            | 1300         | 142682    |              | 23854         |  |
| ACCESS LOCUS GENE   | STATE 12712       | A V OOGOOO | ANDOSOO              | MM_026523 68039    | NM 009167 20418 |   | NM 018801 54525                    | NAM 031042 19521                 | NIVI OI 1016 | R CONSETA | - 1000000 PM | M 054046      |  |
|                     |                   |            |                      |                    |                 |   |                                    |                                  |              |           |              |               |  |

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| Figure 30-2 | BIOLOGICAL FUNCTION | signaling | metabolism                    | metabolism                     | transcription?                   | protein degradation               | unknown   | transport                   | mlsc                             | tumor related (suppressor) | transport                       | ion channel                 | unknown                         | umor related                     | unknown              | unknown  | celi cycle | unknown                           | celi cycle          | cell cycle                      | ctsk       | signaling                        | unknown  | unknown  | unknown  |  |
|-------------|---------------------|-----------|-------------------------------|--------------------------------|----------------------------------|-----------------------------------|-----------|-----------------------------|----------------------------------|----------------------------|---------------------------------|-----------------------------|---------------------------------|----------------------------------|----------------------|----------|------------|-----------------------------------|---------------------|---------------------------------|------------|----------------------------------|----------|----------|----------|--|
|             | LOCALIZATION        | cytoplasm | cytosol; integral to membrane | cytosol;membrane;mitochondrion | transcriptional repressor comple | 265 proteasome; proteasome comple | membrane  | integral to plasma membrane | cAMP-dependent protein kinase co | cytoplasm; nucleus         | extracellular space;integral to | integral to plasma membrane | endoplas mic reticulum membrane | cytoplasm;transcription factor c | integral to membrane |          | cytoplasm  | integral to membrane; synaptic ve | actin cytos keleton | extracellular space;integral to | coated plt | Golgi apparatus;andoplasmic rati |          |          |          |  |
|             | GENE                | Tank      |                               | HK1                            | Ttc3                             | Usp25                             |           | Sic6a6                      | Prkar1a                          | Apc                        | Synpr                           | R yr2                       | Ubqln2                          | Fos                              |                      |          | Ddx24      | Mg29                              | Dstn                | Ereg                            | Dnm2       |                                  |          |          |          |  |
|             | rocus               | 21353     | 72098                         | 15275                          | 22129                            | 30940                             | 71721     | 21366                       | 19084                            | 11789                      | 72003                           | 20191                       | 54609                           | 14281                            | 74411                | 72282    | 27225      | 17306                             | 56431               | 13874                           | 13430      | 76308                            | 66264    | 77015    | 66496    |  |
|             | ACCESS LOCUS        | NM_011529 | AK008493                      | 105277                         | 441                              |                                   | NM_024244 | NM 009320 21366             | AK019147                         | NM 007462                  | AK005132                        | ۱۵                          | NM 018798 54609                 | NM 010234                        | AK016572             | AK007933 | -          | NM 008596 17306                   | 177910 MN           | 1                               | NM 007871  | AK003609                         | AK003287 | AK012553 | AK003282 |  |
|             |                     |           |                               |                                |                                  | . ji                              |           |                             |                                  |                            |                                 |                             |                                 |                                  |                      |          |            |                                   |                     |                                 |            |                                  |          |          |          | The same of the sa |

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| rigure 30-3 | BIOLOGICAL FUNCTION | misc                   | transcription         | transport                        |  |
|-------------|---------------------|------------------------|-----------------------|----------------------------------|--|
|             | LOCALIZATION        | mitochondrion          |                       | extracellular space; integral to |  |
|             | GENE                | Lypla2                 | Rnf10                 | XKh                              |  |
|             | rocus               | 26394                  | 50849                 | 22439                            |  |
|             | ACCESS LOCUS GENE   | NM_011942 26394 Lypla2 | NM_016698 50849 Rnf10 | NM_023500 22439                  |  |
|             |                     |                        |                       |                                  |  |
| 3.45        | _ a                 | (ratio)                | • ••••••              | 11                               |  |

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| rigure 30-4 | BIOLOGICAL FUNCTION | translation | mlsc               | transport            | теtabolism                        | transcription     | unknown  | transcription                | signaling | unknown                          | cell adh                           | signaling                   | unknown  | signaling                        | unknown  |
|-------------|---------------------|-------------|--------------------|----------------------|-----------------------------------|-------------------|----------|------------------------------|-----------|----------------------------------|------------------------------------|-----------------------------|----------|----------------------------------|----------|
|             | LOCALIZATION        |             | nucleosome;nucleus | integral to membrane | extracellular space; mitochondrio | cytoplasminucieus |          | transcription factor complex |           | eukaryotic translation initiatio | extracellular, extrins ic to plasm | Integral to plasma membrane |          | endosome;integral to membrane;pl |          |
|             | GENE                | R p124      | Hist1h2bc          | Slco6b1              | Oxct                              | Hsfi              |          | Evx1                         | Inppl1    |                                  | St14                               | Мрр3                        |          | Trfr                             |          |
|             | rocus               | 68.193      | 68024              | 67854                | 67041                             | 15499             | 231712   | 14028                        | 16332     | 72519                            | 19143                              | 13384                       | 232288   | 22042                            | 68530    |
|             | ACCESS LOCUS GENE   | AK018731    | NM_023422 68024    | NM_026413 67854      | AK011354 67041                    | BC013716          | AK003586 | NM 007966 14028              | AF162781  |                                  | NM 011176 19143 St14               | NM 007863 13384             | AF327857 | NM_011638 22042                  | AK003826 |
|             |                     |             | ·<br>.^            | -                    | `<br>T                            |                   |          | <i>i</i>                     | 1         |                                  |                                    | , ř                         |          | 1                                |          |
|             |                     | ,           |                    |                      |                                   | 1 -               | -        | 1.                           |           | -:<br>-:                         |                                    | ]_                          |          |                                  |          |
| _           | m                   | L           |                    | _                    | L                                 | 1_                |          |                              |           | <u>.</u>                         | 1                                  |                             |          | <u>:</u>                         |          |

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|---------------------|-----------------|----------------------------------|---------------|----------------------------------|-----------------------|-----------------|-----------------|-----------------------------------|-----------------------------|----------------------------------|---------------------------------|----------------------|-------------------------------------|
| BIOLOGICAL FUNCTION | misc            | signaling                        | transcríption | unknown                          | transport             | unknown         | signaling       | unknown                           | metabolism                  | translation                      | ecm                             | transport            | metabolism                          |
| LOCALIZATION        | chloroplast     | extracellular space; microfibril | nucleus       | endoplasmic reticulum;extracellu | mitochondrion;nucleus | membrane        | тетриале        | extracellular space; mitochondrio | integral to plasma membrane | cytosolic large ribosomal subuni | extracellular space;microfibril | integral to membrane | oving calludar engage mithaboundrio |
| GENE                | Urod            | Fbn2                             | AI462438      | Rm3                              | Glrx2                 |                 |                 | Gbas                              | Fads3                       | Rpl37                            | Mfap5                           | Slco6b1              | 4                                   |
| Locus               | 22275           | 14119                            | 98985         | 20168                            | 69367                 | 67602           | 75835           | 14467                             | 60527                       | 67281                            | 50530                           | 67854                | 11000                               |
| ACCESS LOCUS GENE   | NM 009478 22275 | NM 010181 14119                  | BC003237      | NM 053076 20168                  | NM_023505 69367       | NM 026267 67602 | NM 029460 75835 | NM 008095 14467                   | NM 021890 60527             | NM 026069 67281                  | NM 015776 50530                 | NM 026413 67854      | 11000                               |
|                     | "               | Paga                             | g ex og       |                                  |                       | 1               |                 |                                   |                             | 111                              | 1                               | -                    | !                                   |
|                     | 4               |                                  |               |                                  |                       |                 |                 |                                   |                             |                                  |                                 |                      | 100                                 |

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BIOLOGICAL FUNCTION translation Figure 30-6 transport clathrin adaptor complex coated LOCALIZATION prefoldin complex Ap2b1 ACCESS LOCUS GENE Pfdn5 NM\_020031 56612 NM\_053178 94180 AK004976 71770 81-2N8 27-2N8 261-2N8 81-28

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## Figure 31 A

|  | ACCESS   | LOCUS  | GENE   | LOCALIZATION  | BIOLOGICAL FUNCTION  |
|--|--|--|--|---|--|
|  | NM_023202  | 66416  | Ndufa7   | membrane fraction; respiratory ch   | meta bolis m   |
| 3 2 2 3 4 5 7  | AK013269   | 72759  |  | integral to membrane  | unknown  |
| Control of Personal Principles Season (Sept. 4)  | NM_025865  | 66952  |  |   | unknown  |
| And in the State of the State o | AB039178   |  |  |   | unknown  |
|  | AK003826   | 68530  |  |   | unknown  |
|  | NM_008405  | 16415  | ltgb21   | extracellular matrix;extracellul  |  |
| THE RESIDENCE OF THE PARTY OF T |  | 69062  | - ragional                                       | exuacestial marix;exuacesti   | céll adh   |
| THE RESIDENCE OF THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TWO IS NAMED IN COLUMN  | AK007368   |  | N  |   | unknown  |
| 100000000000000000000000000000000000000  | NM_008708  | 18108  | Nmt2   | cytoplas m_   | misc   |
|  | NM_009092  | 20068  | Rps17  | cytosolic small ribosomal subuni  | translation  |
|  | NM_008997  | 19326  | Rab11b   | Golgi apparatus   | traffic  |
|  | NM_015806  | 50772  | Mapk6  | nucleosome  | signaling  |
|  | NM_008707  | 18107  | Nmt1   | cytoplas m  | misc   |
|  | NM_025319  | 66050  |  | Golgi apparatus; endoplas mic reti  | บกknown  |
|  | NM_008770  | 18417  | Cldn11   | integral to plasma membrane;tigh  | cell adh   |
| 5 1 1 1 1 1 1 1 1 1 1 1  | NM_025383  | 66147  |  | membrane  | unknown  |
|  | AK016162   |  |  |   | unknown  |
|  | AK014338   | 74840  | Armet  | extracellular space   | tumor related  |
|  | L34676   | 11784  | Apba2  |   | signaling  |
|  | AK014623   | 66701  |  |   | unknown  |
|  | AK018680   | 66251  | Arfgap3  | cytosol;perinuclear space   | traffic  |
|  | NM_011293  | 20022  | Polr2j   | DNA-directed RNA polymerase II-,  | transcription  |
|  | NM_009717  | 11922  | Neurod6  | nucleus   | trans cription   |
|  | AK009213   | 75573  |  |   | unknown  |
|  | NM_008903  | 19012  | Ppap2a   | Integral to plasma membrane;memb  | meta bolis m   |
|  | AK006273   | 69441  |  | iii—3 — picoma metakrenojmanio  | unknown  |
|  | AK010874   | 69834  |  |   |  |
|  | AK009460   | 66053  | Ppil2  | ministra  | unknown  |
|  | AF 162224  | 30924  |  | nucleus   | translation  |
| A T THE SAME AND A SAME  | <del> </del>   |  | Angpti3  | extracellular space   | signating  |
|  | NM_010160  |  | Cugbp2   | cytoplas m;nucleus  | transcription  |
|  | AK017929   | 76007  | Zfp198   | nucleus   | trans cription   |
|  | NM_011673  |  | Ugcg   | endoplasmic reticulum;extracellu  | lipid metabolism   |
|  | AK012109   | 72194  |  |   | unknown  |
|  | NM_013556  |  | Hprt   | cytoplasm   | meta bolis m   |
|  | NM_009148  |  | Sec8   | exocyst   | trans port   |
|  | AK012326   | 52323  | D5E rtd363e                                      | actin cytoskeleton  | Transport  |
|  | AK019605   | 78799  |  |   | Immune response  |
|  | NM_007567  | 12217  | Bsn  | cytoskeleton;integral to mambran  | signaling  |
|  | AK020441   | 77272  |  |   | unknown  |
|  | AK007485   | 69053  |  |   | unknown  |
|  | NM_026402  | 67841  |  | inner plaque of spindle pole bod  | unknown  |
|  | NM_013835  | 20822  | Ssa2   | ribonucleoprotein complex; viral  | misc   |
|  | BC018329   | 70380  |  | Integral to membrane  | unknown  |
|  | NM_026095  |  | Snrpd3   | ribonucleoprotein complex; virai  | misc   |
|  | AK014763   | 75769  |  | Integral to membrane  | unknown  |
|  | AK002276   | 71668  |  | Integral to membrane  | unknown  |
| والمراجعة المراجعة المساوية المالية  | NM_021550  |  |  | Integral to membrane  |  |
| النحوا   | NM_013596  |  | Mc5r   | Integral to membrane  | unknown  |
|  | NM_054069  |  | Psbpc1   | extracellular space   | signaling  |
| 自己的 化氯化二甲基   | NM_026092  |  | 1 30pc1  |   | signaling (secreted)   |
|  |  |  | Sgce   | extracellular space<br>cytoskeletor;extracellular space   | meta bolis m   |
| fregram in promoting a time grow.  | ININA COLORA   | ነ ኃ0   |  |   |  |
|  | NM_011360  |  |  | Cymskeiewitekiiateituiai spate  | cell adh   |
|  | NM_012038  | <b>26950</b>   | Vsnl1  | cymskeiemitextracertizi Space   | signaling ?  |
| =  | NM_012038<br>AK010430  | 8 26950<br>69219   | Vsnl1<br>Ddah1                                   |   | signaling ?<br>misc  |
|  | NM_012038<br>AK010430<br>U51279  | 26950<br>69219<br>12048  | Vsnl1<br>Ddah1<br>Bcl2l                          | Integral to membrane;mitochondri  | signaling ?<br>misc<br>apoptosis   |
| =  | NM_012038<br>AK010430<br>U51279<br>NM_01580:   | 26950<br>69219<br>12048<br>3 50769   | Vsnl1<br>Ddah1<br>Bcl2i<br>Atp8a2                | Integral to membrane;mitochondri<br>integral to membrane  | signaling ?<br>misc  |
|  | NM_012038<br>AK010430<br>U51279<br>NM_015803<br>NM_00941                                       | 8 26950<br>69219<br>12048<br>3 50769<br>7 22018  | Vsnl1<br>Ddah1<br>Bcl2l                          | Integral to membrane;mitochondri  | signaling ?<br>misc<br>apoptosis   |
| =  | NM_012038<br>AK010430<br>U51279<br>NM_01580:   | 8 26950<br>69219<br>12048<br>3 50769<br>7 22018  | Vsnl1<br>Ddah1<br>Bcl2i<br>Atp8a2                | Integral to membrane;mitochondri<br>integral to membrane  | signaling ?<br>misc<br>apoptosis<br>transport  |
|  | NM_012038<br>AK010430<br>U51279<br>NM_015803<br>NM_00941                                       | 8 26950<br>69219<br>12048<br>3 50769<br>7 22018<br>5 21886                                       | Vsnl1<br>Ddah1<br>Bcl2l<br>Atp8a2<br>Tpo         | Integral to membrane;mitochondri<br>integral to membrane<br>integral to membrane  | signaling ?<br>misc<br>apoptosis<br>transport<br>metabolism  |
|  | NM_012038<br>AK010430<br>U51279<br>NM_015803<br>NM_00941                                       | 8 26950<br>69219<br>12048<br>3 50769<br>7 22018<br>5 21886                                       | Vsni1<br>Ddah1<br>Bci2i<br>Atp8a2<br>Tpo<br>Tle2 | Integral to membrane;mitochondri<br>Integral to membrane<br>Integral to membrane<br>nucleus   | signaling ? misc apoptosis transport metabolism transcription  |
|  | NM_012038<br>AK010430<br>U51279<br>NM_01580:<br>NM_00941<br>NM_01972:<br>NM_008424<br>AF083876 | 8 26950<br>69219<br>12048<br>3 50769<br>7 22018<br>5 21886<br>4 16509<br>13731                   | Vsni1 Ddah1 Bci2i Atp8a2 Tpo Tle2 Kcne1          | Integral to membrane;mitochondri<br>integral to membrane<br>Integral to membrane<br>nucleus<br>integral to plasma membrane<br>Integral to membrane                      | signaling ? misc upoptosis transport metabolism transcription lon channel transport                    |
|  | NM_012038 AK010430 U51279 NM_01580: NM_00941 NM_01972: NM_008424 AF083876 AK012240             | 8 26950<br>69219<br>12048<br>3 50769<br>7 22018<br>5 21886<br>4 16509<br>13731<br>66399          | Vsnl1 Ddah1 Bcl2I Atp8a2 Tpo Tle2 Kcne1 Emp2     | Integral to membrane; mitochondri integral to membrane Integral to membrane nucleus integral to plasma membrane Integral to membrane integral to membrane mitochondrion | signaling? misc upoptosis transport metabolism transcription ion channel transport transport transport |
| =  | NM_012038<br>AK010430<br>U51279<br>NM_01580:<br>NM_00941<br>NM_01972:<br>NM_008424<br>AF083876 | 8 26950<br>69219<br>12048<br>3 50769<br>7 22018<br>5 21886<br>4 16509<br>13731<br>66399<br>75572 | Vsni1 Ddah1 Bci2i Atp8a2 Tpo Tle2 Kcne1          | Integral to membrane;mitochondri<br>integral to membrane<br>Integral to membrane<br>nucleus<br>integral to plasma membrane<br>Integral to membrane                      | signaling ? misc upoptosis transport metabolism transcription lon channel transport                    |

BNS-18 BNS-72 BNS-192 BS-18 BS-72 BS-192



Figure 31 B

| · · ·  | -ACCESS-  | rocus •  | "GENE   | LOCALIZATION  | BIOLOGICAL FUNCTION  |
|--|---|--|---|---|--|
|  |   | 72569  |   |   | ······································   |
|  |   | 20905  | Sts   | avtracellular space; into emil to   | unknown  |
|  |   | 77996  | 36  | extracellular space; integral to  | misc   |
|  |   |  | Uses  |   | unknown  |
|  | NM_008300 -   |  | Hspa4   | cytoplasm   | translation .  |
|  |   | 67859  |   | cytoplas m  | metabolism?  |
| 54 1 52  |   | 19878  | Rock2   | actin cytoskeleton  | signaling  |
|  | NM_008098   | 14489  | Mtpn  |   | transcription  |
|  | NM_009688   | 11798  | Birc4   | cytosol   | apoptos is   |
|  | S82853  | 21915  | Dtymk   |   | meta bolis m   |
| 网络西西西  | NM_031391   | B3602  | Gtf2a1  | transcription factor TFIIA compl  | transcription  |
| 7. St 49. Se   | NM_053115   | 93732  | Acox2   | peroxisome  | <del></del>  |
| 5.3 4.2  | AB041610  | 97484  | Cog8  | Golgi apparatus; membrane   | metabolism   |
|  | AK008988  | 70285  | Ougo  | Cody apparatus, membrane  | traffic  |
|  |   |  |   |   | translation  |
| CORRESPONDED TO A CONTRACTOR OF THE PROPERTY O | J AK 003123   | 68433  |   |   | unknown  |
|  | NM_032003   | 83965  | E npp5  | extracellular space; integral to  | metabolism   |
|  | AK008800  | 70082  |   | membrane  | unknown  |
|  | NM_011907   | 24102  | Trex2   | extrachromosomal circular DNA   | บกหกอพท  |
|  | NM_011539   | 21391  | Tbxas1  | integral to membrane  | lipid metabolism   |
| 的動脈  | NM_008317   | 15586  | Hyal1   |   | metabolis m  |
|  | NM_019938   | 56523  | Pmfbp1  | cytoplas m  | transport  |
|  | NM_010347   | 14797  | Aes   | nucleus   | transcription  |
|  | BC013555  | 70650  | Zcchc8  |   | unknown  |
|  | NM_011012   | 18389  | Opri  | integral to plasma membrane   |  |
|  | NM_009070   | 19826  | Rnps1   |   | signaling (receptor)   |
|  |   |  |   | viral nucleocapsid  | transcription  |
| Contract Con | NM_021543   | 18530  | Pcdh8   | integral to plasma membrane   | cell adh   |
|  | NM_009197   | 20502  | S lc 16a2   | integral to plasma membrane   | transport  |
|  | NM_008468   | 16650  | Kpna6   | importin-, alpha-subunit  | transport  |
|  | NM_033652   | 110648   | Lmx1a   | nucleus   | transcription  |
|  | AK006472  | 74239  |   | myosin  | unknown  |
|  | NM_013535   | 14790  | Grcc10  |   | unknown  |
| Committee of the commit | -   |  |   |   |  |
|  | AK012224  | 76795  |   |   | unknown  |
|  | · <del></del>   |  |   | cytotiasm   | unknown  |
|  | AK002667  | 67899  |   | cytoplas m  | unknown  |
|  | AK002667<br>AK009653  | 67899<br>68544   | \$ 1000 211   | membrane  | unknown<br>unknown   |
|  | AK002667<br>AK009653<br>NM_012030   | 67899<br>68544<br>26941  | Sk9a3r1   |   | unknown<br>unknown<br>cts k  |
|  | AK002667<br>AK009653<br>NM_012030<br>AK010433   | 67899<br>68544<br>26941<br>66609   | Cryzl1  | membrana<br>actin cytoskeleton; apical plasma   | unknown<br>unknown<br>ctsk<br>metabolism   |
|  | AK002667<br>AK009653<br>NM_012030<br>AK010433<br>NM_011529  | 67899<br>68544<br>26941<br>66609<br>21353  | Cryzi1<br>Tank  | membrane<br>aetin cytoskoloton; apical plasma<br>cytopiasm  | unknown<br>unknown<br>cts k  |
|  | AK002667<br>AK009653<br>NM_012030<br>AK010433<br>NM_011529<br>NM_007408   | 67899<br>68544<br>26941<br>66609<br>21353<br>11520   | Cryzi1<br>Tank<br>Adip  | membrane actin cytoskeleton; apical plasma cytoplasm membrane   | unknown<br>unknown<br>ctsk<br>metabolism   |
|  | AK002667<br>AK009653<br>NM_012030<br>AK010433<br>NM_011529<br>NM_007408<br>NM_019767  | 67899<br>68544<br>26941<br>66609<br>21353<br>11520<br>56443  | Cryzi1<br>Tank  | membrane<br>aetin cytoskoloton; apical plasma<br>cytopiasm  | unknown<br>unknown<br>ctsk<br>metabolism<br>signaling  |
|  | AK002667<br>AK009653<br>NM_012030<br>AK010433<br>NM_011529<br>NM_007408   | 67899<br>68544<br>26941<br>66609<br>21353<br>11520   | Cryzi1<br>Tank<br>Adip  | membrane actin cytoskeleton; apical plasma cytoplasm membrane   | unknown unknown etsk metabolism signaling unknown  |
|  | AK002667<br>AK009653<br>NM_012030<br>AK010433<br>NM_011529<br>NM_007408<br>NM_019767  | 67899<br>68544<br>26941<br>66609<br>21353<br>11520<br>56443  | Cryzi1<br>Tank<br>Adfp<br>Arpc1a  | membrane actin cytoskeleton; apical plasma cytoplasm membrane Arp2-3 protein complex  | unknown unknown ctsk metabolism signaling unknown ctsk transcription?  |
|  | AK002667<br>AK009653<br>NM_012030<br>AK010433<br>NM_011529<br>NM_007408<br>NM_019767<br>AK004928  | 67899<br>68544<br>26941<br>66609<br>21353<br>11520<br>56443<br>58275   | Cryzi1<br>Tank<br>Adip<br>Arpc1a<br>Rbm14   | membrane actin cytoskeleton; apical plas ma cytoplas m membrane Arp2-3 protein complex cytoplas m; mediator complex; ribon  | unknown unknown ctsk metabolism signaling unknown ctsk   |
|  | AK002667<br>AK009653<br>NM_012030<br>AK010433<br>NM_011529<br>NM_007408<br>NM_019767<br>AK004928<br>NM_025407<br>AK020613   | 67899<br>68544<br>26941<br>66609<br>21353<br>11520<br>56443<br>58275<br>22273<br>78672   | Cryzl1 Tank Adip Arpc1a Rbm14 Ugcrc1  | membrane actin cytoskeleton; apical plasma cytoplas m membrane Arp2-3 protein complex cytoplas m; media tor complex; ribon mitochondrial electron transport integral to membrane  | unknown unknown etsk metabolism signaling unknown etsk transcription?  |
|  | AK002667<br>AK009653<br>NM_012030<br>AK010433<br>NM_011529<br>NM_007408<br>NM_019767<br>AK004928<br>NM_025407<br>AK020613<br>NM_010710  | 67899<br>68544<br>26941<br>66609<br>21353<br>11520<br>56443<br>58275<br>22273<br>78672<br>16870  | Cryzi1<br>Tank<br>Adip<br>Arpc1a<br>Rbm14   | membrane actin cytoskeleton;apical plasma cytoplasm membrane Arp2-3 protein complex cytoplasm;mediator complex;ribon mitochondrial electron transport   | unknown unknown etsk metabolism signaling unknown etsk transcription? 'metabolism misc transcription   |
|  | AK002667<br>AK009653<br>NM_012030<br>AK010433<br>NM_011529<br>NM_019767<br>AK004928<br>NM_025407<br>AK020613<br>NM_010710<br>BC004630   | 67899<br>68544<br>26941<br>66609<br>21353<br>11520<br>56443<br>56275<br>22273<br>78672<br>16870<br>216549  | Cryzi1 Tank Adip Arpc1a Rbm14 Ugcrc1  | membrane actin cytoskoloton; apical plas ma  cytoplas m membrane Arp2-3 protein complex cytoplas m; media tor complex; ribon mitochondrial electron trans port integral to membrane transcription factor complex  | unknown unknown etsk metabolism signaling unknown etsk transcription? 'matabolism misc transcription unknown   |
|  | AK002667<br>AK009653<br>NM_012030<br>AK010433<br>NM_011529<br>NM_007408<br>NM_019767<br>AK004928<br>NM_025407<br>AK020613<br>NM_010710<br>BC004630  | 67899<br>68544<br>26941<br>66609<br>21353<br>11520<br>56443<br>58275<br>22273<br>78672<br>16870<br>216549<br>26926   | Cryzi1 Tank Adip Arpc1a Rbm14 Ugcrc1 Lhx2 Pdcd8   | membrane actin cytoskeleton; apical plas ma  cytoplas m membrane Arp2-3 protein complex cytoplas m; media tor complex; ribon mitochondrial electron trans port integral to membrane transcription factor complex  cytosot; mitochondrial intermembr   | unknown unknown ctsk metabolism signaling unknown ctsk transcription? 'metabolism misc transcription unknown   |
|  | AK002667<br>AK009653<br>NM_012030<br>AK010433<br>NM_011529<br>NM_007408<br>NM_019767<br>AK004928<br>NM_025407<br>AK020613<br>NM_010710<br>BC004630<br>NM_012019   | 67899<br>68544<br>26941<br>66609<br>21353<br>11520<br>56443<br>58275<br>22273<br>78672<br>16870<br>216549<br>26926<br>18041  | Cryzi1 Tank Adip Arpc1a Rbm14 Ugcrc1  | membrane actin cytoskoloton; apical plas ma  cytoplas m membrane Arp2-3 protein complex cytoplas m; media tor complex; ribon mitochondrial electron trans port integral to membrane transcription factor complex  | unknown unknown cts k metabolis m signaling unknown cts k transcription ? matabolis m misc transcription unknown apoptos is metabolis m  |
|  | AK002667 AK009653 NM_012030 AK010433 NM_011529 NM_007408 NM_019767 AK004928 NM_025407 AK020613 NM_010710 BC004630 NM_012019 NM_012019 NM_010911 AK020702  | 67899<br>68544<br>26941<br>66609<br>21353<br>11520<br>56443<br>56275<br>22273<br>78672<br>16870<br>216549<br>26926<br>18041<br>78428   | Cryzl1 Tank Adip Arpc1e Rbm14 Ugcrc1 Lhx2 Pdcd8 Nfs1  | membrane actin cytoskeleton;apical plasma  cytoplasm membrane Arp2-3 protein complex cytoplasm;mediator complex;ribon mitochondrial electron transport integral to membrane transcription factor complex  cytosotmitochondrial intermembr cytosotextracellular space;mito   | unknown unknown etsk metabolism signaling unknown etsk transcription? 'matabolism misc transcription unknown apoptos's metabolism  |
|  | AK002667 AK009653 NM_012030 AK010433 NM_011529 NM_007408 NM_019767 AK004928 NM_025407 AK020613 NM_010710 BC004630 NM_012019 NM_010911 AK020702 NM_026523  | 67899<br>68544<br>26941<br>66609<br>21353<br>11520<br>56443<br>56275<br>22273<br>78672<br>16870<br>216549<br>26926<br>18041<br>78428<br>68039  | Cryzl1 Tank Adip Arpc1a Rbm14 Ugcrc1 Lhx2 Pdcd8 Nfs1  | membrane actin cytoskeleton; apical plasma  cytoplas m membrane Arp2-3 protein complex cytoplas m; media tor complex; ribon mitochondrial electron trans port integral to membrane transcription factor complex  cytosotmitochondrial intermembr cytosotextracellular space; mito   | unknown unknown etsk metabolism signaling unknown etsk transcription? 'matabolism misc transcription unknown apoptosis metabolism unknown signaling (secreted)   |
|  | AK002667 AK009653 NM_012030 AK010433 NM_011529 NM_007408 NM_019767 AK004928 NM_025407 AK020613 NM_010710 BC004630 NM_012019 AK020702 NM_010211  | 67899<br>68544<br>26941<br>66609<br>21353<br>11520<br>56443<br>56275<br>22273<br>78672<br>16870<br>216549<br>26926<br>18041<br>78428<br>68039<br>75062                                     | Cryzi1 Tank Adip Arpc1a Rbm14 Uqerc1 Lhx2 Pdcd8 Nfs1 Nmb Sf3a3  | membrane actin cytoskeleton; apical plasma  cytoplasm membrane Arp2-3 protein complex cytoplasm; mediator complex; ribon mitochondrial electron trans port integral to membrane transcription factor complex  cytosotmitochondrial intermembr cytosotextracellular space; mito  extracelitular space spilcecome complex   | unknown unknown etsk metabolism signaling unknown etsk transcription? 'matabolism misc transcription unknown apoptos's metabolism  |
|  | AK002667 AK009653 NM_012030 AK010433 NM_011529 NM_019767 AK004928 NM_025407 AK020613 NM_010710 BC004630 NM_010911 AK020702 NM_010911 AK020702 NM_026523 BC009141 3 NM_019967  | 67899<br>68544<br>26941<br>66609<br>21353<br>11520<br>56443<br>58275<br>22273<br>78672<br>16870<br>216549<br>26926<br>18041<br>78428<br>68039<br>75062                                     | Cryzi1 Tank Adfp Arpc1a Rbm14 Uqcrc1 Lhx2 Pdcd8 Nfs1 Nmb Sf3a3 Dbccr1   | membrane actin cytoskeleton; apical plasma  cytoplasm membrane Arp2-3 protein complex cytoplasm; mediator complex; ribon mitochondrial electron transport integral to membrane transcription factor complex  cytosotmitochondrial intermembr cytosotextracellular space; mito  extracellular space spilceosome complex extracellular space; membrane att  | unknown unknown etsk metabolism signaling unknown etsk transcription? 'metabolism misc transcription unknown apoptos's metabolism unknown signaling (secreted)   |
|  | AK002667 AK009653 NM_012030 AK010433 NM_011529 NM_007408 NM_019767 AK004928 NM_025407 AK020613 NM_010710 BC004630 NM_010911 AK020702 NM_026523 BC009141 3 NM_019967 NM_010149   | 67899<br>68544<br>26941<br>66609<br>21353<br>11520<br>56443<br>58275<br>22273<br>78672<br>16870<br>216549<br>26926<br>18041<br>78428<br>68039<br>75062<br>56710                            | Cryzi1 Tank Adip Arpc1a Rbm14 Ugcrc1 Lhx2 Pdcd8 Nfs1 Nmb Sf3a3 Dbccr1 Epor  | membrane actin cytoskeleton; apical plasma  cytoplasm membrane Arp2-3 protein complex cytoplasm; mediator complex; ribon mitochondrial electron trans port integral to membrane transcription factor complex  cytosotmitochondrial intermembr cytosotextracellular space; mito  extracelitular space spilcecome complex   | unknown unknown etsk metabolism signaling unknown etsk transcription? 'metabolism misc transcription unknown apoptos's metabolism unknown signaling (secreted) Transcription   |
|  | AK002667 AK009653 NM_012030 AK010433 NM_011529 NM_007408 NM_019767 AK004928 NM_025407 AK020613 NM_010710 BC004630 NM_010911 AK020702 NM_026523 BC009141 3 NM_019967 NM_010149   | 67899<br>68544<br>26941<br>66609<br>21353<br>11520<br>56443<br>58275<br>22273<br>78672<br>16870<br>216549<br>26926<br>18041<br>78428<br>68039<br>75062<br>56710                            | Cryzi1 Tank Adfp Arpc1a Rbm14 Uqcrc1 Lhx2 Pdcd8 Nfs1 Nmb Sf3a3 Dbccr1   | membrane actin cytoskeleton; apical plasma  cytoplasm membrane Arp2-3 protein complex cytoplasm; mediator complex; ribon mitochondrial electron transport integral to membrane transcription factor complex  cytosotmitochondrial intermembr cytosotextracellular space; mito  extracellular space spilceosome complex extracellular space; membrane att  | unknown unknown etsk metabolism signaling unknown etsk transcription? 'metabolism misc transcription unknown apoptosis metabolism unknown signaling (secreted) Transcription misc  |
|  | AK002667 AK009653 NM_012030 AK010433 NM_011529 NM_007408 NM_019767 AK004928 NM_025407 AK020613 NM_010710 BC004630 NM_010911 AK020702 NM_026523 BC009141 3 NM_019967 NM_010149   | 67899<br>68544<br>26941<br>66609<br>21353<br>11520<br>56443<br>58275<br>22273<br>78672<br>16870<br>216549<br>26926<br>18041<br>78428<br>68039<br>75062<br>56710<br>13857                   | Cryzi1 Tank Adip Arpc1a Rbm14 Ugcrc1 Lhx2 Pdcd8 Nfs1 Nmb Sf3a3 Dbccr1 Epor  | membrane actin cytoskeleton; apical plasma  cytoplasm membrane Arp2-3 protein complex cytoplasm; mediator complex; ribon mitochondrial electron trans port integral to membrane transcription factor complex  cytosotextracellular space; mito  extracellular space spilceosome complex extracellular space; membrane att extracellular space; membrane att extracellular space; integral to  | unknown unknown etsk metabolism signaling unknown etsk transcription? 'matabolism misc transcription unknown apoptos's metabolism unknown signaling (secreted) Transcripton misc   |
|  | AK002667 AK009653 NM_012030 AK010433 NM_011529 NM_007408 NM_019767 AK004928 NM_025407 AK020613 NM_010710 BC004630 NM_012019 NM_012019 AK020702 NM_026523 BC009141 NM_019149 NM_0110942  | 67899<br>68544<br>26941<br>66609<br>21353<br>11520<br>56443<br>58275<br>22273<br>78672<br>16870<br>216549<br>26926<br>18041<br>78428<br>68039<br>75062<br>56710<br>13857<br>19654<br>18196 | Cryzi1 Tank Adip Arpc1a Rbm14 Ugcrc1 Lhx2 Pdcd8 Nfs1 Nmb Sf3a3 Dbccr1 Epor Rbm6                                       | membrane actin cytoskeleton; apical plasma  cytoplasm membrane Arp2-3 protein complex cytoplasm; mediator complex; ribon mitochondrial electron transport integral to membrane transcription factor complex  cytosot; mitochondrial intermembr cytosot; extracellular space; mito  extracellular space spiliceosome complex extracellular space; membrane att extracellular space; integral to spiliceosome complex   | unknown unknown etak metabolism signaling unknown etak transcription ? 'matabolism mise transcription unknown apoptos is metabolism unknown signaling (secreted) Transcription mise signaling (receptor) mise  |
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|  | AK002667 AK009653 NM_012030 AK010433 NM_011529 NM_0019767 AK004928 NM_025407 AK020613 NM_010710 BC004630 NM_010911 AK020702 NM_026523 BC009141 NM_019657 NM_010942 NM_010942 NM_010942 NM_008420 NM_019657  | 67899 68544 26941 66609 21353 11520 56443 58275 22273 78672 16870 216549 26926 18041 78428 68039 75062 56710 13857 19654 18196 14873 26914 67855 16500                                     | Cryzi1 Tank Adip Arpc1a Rbm14 Uqcrc1 Lhx2 Pdcd8 Nfs1  Nmb Sf3a3 Dbccr1 Epor Rbm6 Nsg1 Gsto1 H2afy Kcnb1 Hsd17b12      | membrane actin cytoskeleton; apical plasma  cytoplas m membrane Arp2-3 protein complex cytoplas m; media tor complex; ribon mitochondrial electron trans port integral to membrane transcription factor complex  cytosotemitochondrial intermembr cytosotextracellular space; mito  extracellular space spiliceosome complex extracellular space; membrane att extracellular space; integral to spiliceosome complex Golgi apparatus; integral to memb cytoplas m centrosome; condensed chromosome;  voltage-gated potassium channel integral to membrane microsome   | unknown unknown etsk metabolism signaling unknown etsk transcription? 'metabolism misc transcription unknown apoptosis metabolism unknown signaling (secreted) Transcription misc signaling (receptor) misc signaling (receptor) misc etgraling misc e |
|  | AK002667 AK009653 NM_012030 AK010433 NM_011529 NM_0019767 AK004928 NM_025407 AK020613 NM_010710 BC004630 NM_012019 NM_010911 AK020702 NM_026523 BC009141 NM_019967 NM_010942 NM_010942 NM_010942 NM_01988 AK004007 NM_019857  | 67899 68544 26941 66609 21353 11520 56443 58275 22273 78672 16870 216549 26926 18041 78428 68039 75062 56710 13857 19654 18196 14873 26914 67855 16500 56348                               | Cryzi1 Tank Adfp Arpc1a Rbm14 Uqcrc1 Lhx2 Pdcd8 Nfs1 Nmb Sf3a3 Dbccr1 Epor Rbm6 Nsg1 Gsto1 H2afy Kcnb1                | membrane actin cytoskeleton; apical plasma  cytoplas m membrane Arp2-3 protein complex cytoplas m; media tor complex; ribon mitochondrial electron transport integral to membrane transcription factor complex  cytosotemitochondrial intermembr cytosotextracellular space; mito  extracellular space splice osome complex extracellular space; membrane att extracellular space; integral to splice osome complex Golgi apparatus; integral to memb cytoplas m centrosome; condensed chromosome;  | unknown unknown etsk metabolism signaling unknown etsk transcription? 'metabolism misc transcription unknown apoptosis metabolism unknown signaling (secreted) Transcription misc signaling (receptor) misc signaling (receptor) misc eli cycle unknown lon channel  |
|  | AK002667 AK009653 NM_012030 AK010433 NM_011529 NM_007408 NM_019767 AK004928 NM_025407 AK020613 NM_010710 BC004630 NM_012019 NM_010911 AK020702 NM_026523 BC009141 NM_010917 NM_010942 | 67899 68544 26941 66609 21353 11520 56443 58275 22273 78672 16870 216549 26926 18041 78428 68039 75062 56710 13857 19654 18196 14873 26914 67855 16500 756348 26920 71955                  | Cryzi1 Tank Adip Arpc1a Rbm14 Uqcrc1 Lhx2 Pdcd8 Nfs1  Nmb Sf3a3 Dbccr1 Epor Rbm6 Nsg1 Gsto1 H2afy Kcnb1 Hsd17b12      | membrane actin cytoskeleton; apical plasma  cytoplas m membrane Arp2-3 protein complex cytoplas m; media tor complex; ribon mitochondrial electron trans port integral to membrane transcription factor complex  cytosotemitochondrial intermembr cytosotextracellular space; mito  extracellular space spiliceosome complex extracellular space; membrane att extracellular space; integral to spiliceosome complex Golgi apparatus; integral to memb cytoplas m centrosome; condensed chromosome;  voltage-gated potassium channel integral to membrane microsome   | unknown unknown etsk metabolism signaling unknown etsk transcription? 'metabolism misc transcription unknown apoptosis metabolism unknown signaling (secreted) Transcription misc signaling (receptor) misc signaling (receptor) misc etgraling misc e |
|  | AK002667 AK009653 NM_012030 AK010433 NM_011529 NM_007408 NM_019767 AK004928 NM_025407 AK020613 NM_010710 BC004630 NM_012019 NM_010911 AK020702 NM_026523 BC009141 NM_010917 NM_010942 | 67899 68544 26941 66609 21353 11520 56443 58275 22273 78672 16870 216549 26926 18041 78428 68039 75062 56710 13857 19654 18196 14873 26914 67855 16500 56348                               | Cryzi1 Tank Adip Arpc1a Rbm14 Uqcrc1 Lhx2 Pdcd8 Nfs1  Nmb Sf3a3 Dbccr1 Epor Rbm6 Nsg1 Gsto1 H2afy Kcnb1 Hsd17b12      | membrane actin cytoskeleton; apical plasma  cytoplas m membrane Arp2-3 protein complex cytoplas m; media tor complex; ribon mitochondrial electron trans port integral to membrane transcription factor complex  cytosotemitochondrial intermembr cytosotextracellular space; mito  extracellular space spiliceosome complex extracellular space; membrane att extracellular space; integral to spiliceosome complex Golgi apparatus; integral to memb cytoplas m centrosome; condensed chromosome;  voltage-gated potassium channel integral to membrane microsome   | unknown unknown etsk metabolism signaling unknown etsk transcription ? 'matabolism misc transcription unknown apoptos's metabolism unknown signaling (secreted) Transcription misc signaling (receptor) misc signaling (receptor) misc cell cycle unknown lon channel metabolism unknown   |
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|  | AK002667 AK009653 NM_012030 AK010433 NM_011529 NM_019767 AK004928 NM_025407 AK020613 NM_010710 BC004630 NM_010911 AK020702 NM_010911 NM_010142 NM_010942 NM_010942 NM_010988 AK004007 NM_019657           | 67899 68544 26941 66609 21353 11520 56443 58275 22273 78672 16870 216549 26926 18041 78428 68039 75062 56710 13857 19654 18196 14873 26914 67855 16500 756348 3 26920 71955                | Cryzl1 Tank Adfp Arpc1a Rbm14 Uqerc1 Lhx2 Pdcd8 Nfs1 Nmb Sf3a3 Dbccr1 Epor Rbm6 Nsg1 Gsto1 H2afy Kcnb1 Hsd17b12 Ma2a8 | membrane actin cytoskeleton; apical plasma  cytoplas m membrane Arp2-3 protein complex cytoplas m; media tor complex; ribon mitochondrial electron trans port integral to membrane transcription factor complex  cytosot mitochondrial intermembr cytosot extracellular space; mito  extracellular space spliceosome complex extracellular space; membrane att extracellular space; integral to spliceosome complex Golgi apparatus; integral to memb cytoplas m centrosome; condensed chromosome;  voltage-gated potassium channel integral to membrane microsome Integral to membrane   | unknown unknown etsk metabolism signaling unknown etsk transcription? 'matabolism misc transcription unknown apoptosis metabolism unknown signaling (secreted) Transcription misc signaling (receptor) misc signaling misc cell cycle unknown lon channel metabolism unknown   |
|  | AK002667 AK009653 NM_012030 AK010433 NM_011529 NM_001408 NM_019767 AK004928 NM_025407 AK020613 NM_010710 BC004630 NM_012019 NM_010911 AK020702 NM_026523 BC009141 NM_010942 NM_010942 NM_010942 NM_010952 AK004007 NM_008420 NM_019657 NM_019657 NM_019657 NM_019657 NM_019657 NM_019657 NM_019657 NM_019657 NM_019657  | 67899 68544 26941 66609 21353 11520 56443 58275 22273 78672 16870 216549 26926 18041 78428 68039 75062 56710 13857 19654 18196 14873 26914 67855 0 16500 71955 70153 9 21810 67976         | Cryzl1 Tank Adfp Arpc1a Rbm14 Uqerc1 Lhx2 Pdcd8 Nfs1 Nmb Sf3a3 Dbccr1 Epor Rbm6 Nsg1 Gsto1 H2afy Kcnb1 Hsd17b12 Ma2a8 | membrane actin cytoskeleton; apical plasma  cytoplas m membrane Arp2-3 protein complex cytoplas m; media tor complex; ribon mitochondrial electron trans port integral to membrane transcription factor complex  cytosot mitochondrial intermembr cytosot extracellular space; mito  extracellular space spliceosome complex extracellular space; membrane att extracellular space; integral to spliceosome complex Golgi apparatus; integral to memb cytoplas m centrosome; condensed chromosome;  voltage-gated potassium channel integral to membrane microsome Integral to membrane   | unknown unknown etsk metabolism signaling unknown etsk transcription? 'matabolism misc transcription unknown apoptos's metabolism unknown signaling (secreted) Transcription misc signaling (receptor) misc edit cycle unknown lon channel metabolism unknown unknown  |

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|---------------------|----------------------------------|----------------------|----------------------|----------|----------|-----------------|---------------------|-----------------------------------|---------------------------------|--|-----------------------------------|--|
| BIOLOGICAL FUNCTION | metabolism                       | unknown              | signaling (secreted) | unknown  | unknown  | unknown         | . Transcription     | misc                              | signaling (receptor)            | misc   | cell cycle                        | unknown  |
| LOCALIZATION        | integral to membrane; micros ome | integral to membrane | extracellular space  |          |          | тетрпа          | spliceosome complex | extracellular space; membrane att | extracellular space;integral to | cytoplasm  | centrosome; condensed chromosome; |  |
| GENE                | Hsd17b12                         | Ma2a8                | Nmb                  |          |          | Adfp            | S f3a3              | Dbccr1                            | Epor                            | Gsto1  | H2afy                             |  |
| LOCUS               | 56348                            | 26920                | 68039                | 71955    | 70153    | 11520           | 75062               | 56710                             | 13857                           | 14873  | 26914                             | 67855  |
| ACCESS LOCUS GENE   | NM_019657 56348                  | NM_012018 26920      | NM_026523 68039      | AK010262 | AK008736 | NM 007408 11520 | RC009141            | NM 019967 56710                   | NM 010149 13857                 | NM 010362 14873  | AB071988                          | AK004007   |
|                     | 103                              |                      |                      |          |          |                 | . 154               | 30                                |                                 |  |                                   |  |
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| SIOLOGICAL FUNCTION | unknown  | unknown  | signaling (receptor)        | transcription | unknown   | transcription      | cell adh                    | unknown  | metabolism                      | ransport                 |   |
|---------------------|----------|----------|-----------------------------|---------------|-----------|--------------------|-----------------------------|----------|---------------------------------|--------------------------|---|
|                     | 3        |          | 8                           | 7             | 3         | Þ                  | 5                           | 3        | -                               | Þ                        |   |
| LOCALIZATION        | myosin   |          | integral to plasma membrane | nucieus       | cytoplasm | víral nucleocapsid | integral to plasma membrane | membrane | extracellular space;integral to | importin-, aipha-subunit |   |
| GENE                |          |          | Oprl                        | Lmx1a         |           | Rnps1              | Pcdh8                       |          | Enpp5                           | Kpna6                    |   |
| LOCUS               | 74239    | 76795    | 18389                       | 110648        | 67899     | 19826              | 18530                       | 70082    | 83965                           | 16650                    |   |
| ACCESS LOCUS GENE   | AK006472 | AK012224 | NM_011012 18389             | NM_033652     | AK002667  | NM 009070 19826    | NM 021543 18530             | AK008800 | NM 032003 83965                 | NM 008468 16650          |   |
|                     | M        | F777     | 41.8                        | ji<br>Jeren   |           | F.                 |                             |          | ŢŢ.                             |                          | 1 |
|                     |          |          | list,                       |               |           |                    |                             |          |                                 |                          |   |
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| BIOLOGICAL FUNCTION | signaling                              | ctsk                   | transcription?                     | metabolism            | unknown         |
|---------------------|--|------------------------|------------------------------------|-----------------------|-----------------|
| LOCALIZATION        | cytoplasm                              | Arp2-3 protein complex | cytoplasm; mediator complex; ribon |                       |                 |
| GENE                | Tank                                   | Arpc1a                 | Rbm14                              | Cryzl1                |                 |
| ACCESS LOCUS GENE   | 21353                                  | 56443                  | 56275                              | 60999                 | 216549          |
| ACCESS              | ************************************** | M 019767 56443 Arpc1a  | AK004928 56275 R                   | AK010433 66609 Cryzl1 | BC004630 216549 |

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|             |                     |                      |                         |                 |                |                     |                                  |                                  |                 |                |                 |                | 1  |          |                      |                                  |                  |
|-------------|---------------------|----------------------|-------------------------|-----------------|----------------|---------------------|----------------------------------|----------------------------------|-----------------|----------------|-----------------|----------------|--|----------|----------------------|----------------------------------|------------------|
| Figure 31-4 | BIOLOGICAL FUNCTION | unknown              | signaling (secreted)    | translation     | translation    | signaling           | transcription                    | mlsc                             | metabolism      | unknown        | mlsc            | translation    | unknown  | unknown  | misc                 | metabolism                       | unknown          |
|             | LOCALIZATION        | integral to membrane | extracellular space     | cytoplasm       |                | actin cytos keleton | transcription factor TFIIA compl | ribonucie oprotein complex;viral | peroxisome      |                | cytoplasm       | nucleus        | membrane   |          | cytoplasm            | membrane fraction respiratory ch |                  |
|             | GENE                |                      | Psbpc1                  | Hspa4           |                | Rock2               | Gtf2a1                           | Ssa2                             | Acox2           |                | Nmt2            | P pil2         |  |          | Nmt1                 | Ndufa7                           |                  |
|             | TOCUS               | 72759                | 114895                  | 15525           | 70285          | 19878               | 83602                            | 20822                            | 93732           | 69062          | 18108           | 66053          | 66147  |          | 18107                | 66416                            | 66052            |
|             | ACCESS LOCUS GENE   | AK013269 72759       | NM_054069 114895 Psbpc1 | NM_008300 15525 | AK008988 70285 | NM_009072 19878     | NM_031391 83602                  | NM_013835 20822                  | NM_053115 93732 | AK007368 69062 | NM_008708 18108 | AK009460 66053 | NM_025383 66147  | AK016162 | NM_008707 18107      | NM_023202 66416                  | NIM OPERES GEGES |
|             |                     |                      |                         |                 |                |                     |                                  |                                  |                 | ,              |                 |                | The state of the s |          | Taylor of the second | 1                                |                  |
| _           | Į3                  | <u>L</u> .           |                         |                 |                |                     |                                  |                                  |                 | <u> </u>       | -               | <u> </u>       | <u> </u>   | :        |                      |                                  | _                |

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Figure 31-5

| TION                |                 |                                  |                     |          |               |          |                   |          |                                   |          |                                 |
|---------------------|-----------------|----------------------------------|---------------------|----------|---------------|----------|-------------------|----------|-----------------------------------|----------|---------------------------------|
| BIOLOGICAL FUNCTION | traffic         | metaboilsm                       | signaling           | unknown  | transcription | unknown  | transcription     | unknown  | lipid metabolism                  | unknown  | transcription                   |
| LOCALIZATION        | Golgi apparatus | integral to plasma membrane;memb | extracellular space |          | nucleus       |          | cytoplasm;nucleus |          | endoplas mic reticulum;extracellu |          | DNA-directed R NA polymerase [] |
| GENE                | Rab11b          | P pap2a                          | Angpt13             |          | Neurode       |          | Cugbp2            |          | Ugcg                              |          | Dolr2i                          |
| Locus               | 19326           | 19012                            | 30924               | 69441    | 11922         | 69834    | 14007             | 72194    | 22234                             | 75573    | 2000                            |
| ACCESS LOCUS GENE   | NM_008997 19326 | NM_008903 19012                  | AF162224            | AK006273 | NM_009717     | AK010874 | l۵                | AK012109 | NM_011673 22234                   | AK009213 | 1 NIN 041202 20022              |
|                     |                 |                                  |                     | ;<br>, . | 1             | ·<br> -  |                   | · .      | (a):                              | 1112     | ĵ.                              |
|                     |                 |                                  | ) <u> </u>          |          |               |          |                   |          |                                   |          |                                 |

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|-------------|---------------------|----------------------|----------------------|-----------------|-----------------------------------|----------------------|-----------------------------|----------------|-----------------|--------------------------------------|----------------------|----------------------|-----------------|
| Figure 31-6 | BIOLOGICAL FUNCTION | unknown              | metabolism           | apoptosis       | apoptosis                         | transport            | ion channel                 | mlsc           | transcription   | cell adh                             | unknown              | signaling            | signaling?      |
|             | LOCALIZATION        | integral to membrane | Integral to membrane | cytosol         | integral to membrane; mitochondri | integral to membrane | integral to plasma membrane |                | nucleus         | cytos ke leton; extrace liular space | Integral to membrane | integral to membrane |                 |
|             | GENE                |                      | Тро                  | Birc4           | Bcl2l                             | Emp2                 | Kcne1                       | Ddah1          | Tle2            | Sgce                                 |                      | Mc5r                 | Vsnl1           |
|             | Locus               | 59048                |                      | 11798           | 12048                             | 13731                | 16509                       | 69219          | 21886           |                                      | 71668                |                      | 26950           |
|             | ACCESS LOCUS GENE   | NM_021550 59048      | NM_009417 22018      | NM_009688 11798 | U51279                            | AF083876 13731       | NM_008424 16509             | AK010430 69219 | NM_019725 21886 | NM_011360 20392                      | AK002276 71668       | NM_013596 17203      | NM 012038 26950 |
|             |                     |                      | _                    |                 |                                   | Ļ                    |                             |                |                 |                                      |                      |                      |                 |
|             |                     |                      | :                    | <u>ا</u>        | 滇                                 |                      | <u>.</u>                    |                | :<br>           | <b>:</b><br>:                        | ć.                   |                      | 1               |
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| ACCESS      | LOCUS  | GENE       | LOCALIZATION cytoskeleton; extracellular matri | BIOLOGICAL FUNCTION   |
|-------------|--------|------------|--|-----------------------|
| NM 007471   | 11820  | App        | Golgi apparatus; coated pitendop               | celladh               |
| NM_053186   | 94218  | Cnnm3      | voltage-gated potass tum channel               | ion channel           |
| NM 019477   | 50790  | Faci4      | cytoplas mintegral to membrane                 | metabolism            |
| NM 008325   | 15932  | Idua       | extracellular space;lysosome                   | metabolism            |
| NM 020026   | 26879  | B3galt3    | Golgi apparatus; extracellular sp              | misc                  |
| NM 008138   | 14678  | Gnai2      | ріаѕта тетртапе                                | signaling (receptor)  |
| NM 008230   |        | Hdc        | extrachromosomal circular DNA                  | metabolism            |
| NM 019693   |        | Batla      | splice os ome complex                          | transcription         |
| NM 025299   |        | Txn[4      | snRNP U5                                       | transcription         |
| NM 019772   | 56372  |            | integral to membrane                           | protein degradation ? |
| NM 007874   | 13476  | Dol        | integral to membrane                           | tumor related         |
| AK015921    | 75209  | Sv2c       | synaptic vesticle                              | misc                  |
| AK005345    | 69059  |            | extracellular space;integral to                | unknown               |
| NM 013645   | 19293  | Pva        | axon;tropordn complex                          | misc                  |
| NM 012029   | 26940  | Sitpec     | transcription factor complex                   | transcription         |
| AK017081    | 74480  | Samd4      |  | unknown               |
| NM 020590   | 57436  | Gabarapl1  | plasma membrane                                | ctk                   |
| NM 007529   | 12032  | Bcan       | extracellular matrix;extracellul               | signaling / ecm       |
| 134676      | 11784  | Apba2      |  | signafing             |
| AJ276505    | 79202  | Trifisf22? | integral to membrane                           | signaling (receptor)  |
| NM 008377   | 16206  | Lrlg1      | extracellular space;integral to                | tumor related         |
| - NM 007495 | 11899  | Astn1      | integral to membrane                           | misc                  |
| NM 026495   | 67991  |            | transcription factor complex                   | unknown               |
| AK016542    | 74386  |            | тетргапе                                       | unknown               |
| AF072758    | 26568  | SlcZ7a3    | Integral to membrane                           | transport             |
| NM 026219   | 67530  | Uqcrb      | mitochondrial electron transport               | metabolism            |
| AK008201    | 69875  | Ndufa11    |  | misc                  |
| BC003914    | 58875  |            | mitochondrion                                  | mlsc                  |
| AK007598    | 69162  |            |  | traffic               |
| AB047820    | 104416 | Bap1       | nucleus  | protein degradation   |
| NM 025407   | 22273  | Uqcrc1     | mitochondrial electron transport               | metabolism            |
| BC003847    | 77125  |            | nucleus  | unknown               |
| NM_016698   | 50849  | Rnf10      |  | transcription         |
| AK015106    | 106039 | Gga1       | Golgi stack                                    | transport             |
| 4           | 23996  | Psmc4      | 265 proteasome; cytosof mucleus                | protein degradation   |

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-0.4 0.0 0.2 0.4 Log.(ratio)



## Figure 32 B

| U.   |                        |                         |                 |   | rigure 32 p                       |
|--|------------------------|-------------------------|-----------------|---|-----------------------------------|
| to district to in the control of   | ACCEST"                | TOCUS' "                | 'GENE           | LOCALIZATION  | BIOLOGICAL FUNCTION               |
| <b>学程制</b> 超割 名  | AK007993               | 67490                   |                 | membrane  | unknown                           |
|  | NM_026154              | 107732                  | Mrpl10          | mitochondrial large ribosomal su  | misc                              |
|  | BC014687               | 68964                   |                 |   | unknown                           |
|  | AB045323               | 52357                   | D8Ertd594e      | Intercellular Junction  | unknown                           |
|  | U51204                 | 100732                  | Mapre3          |   | ctsk                              |
|  | NM_020293              | 56863                   | Cldn9           | extracellular space;integral to   | cell adh ?                        |
|  | AK 003400              | 68566                   | Calcyon         | Integral to membrane  | signaling                         |
|  | AK017676               | 70594                   |                 |   | unknown                           |
|  | AK 008083              | 72041                   |                 |   | unknown                           |
|  | NM_008729              | 18163                   | Catnd2          | cytoskeleton  | cell adhesion                     |
|  | AK009243               | 69534                   | Avpl1           |   | signaling                         |
|  | NM_025387              | 66154                   |                 | integral to membrane  | unknown                           |
|  | BC 005459              | 102866                  | Pls3            | actin cytoskeleton  | ctsk                              |
|  | AK017214               | 71323                   |                 |   | tumor related                     |
| 13:30  | NM_009652              | 11651                   | Akt1            | cytoplasm;protein kinase CK2 com  | apoptosis                         |
|  | NM_007804              | 13048                   | Cutl2           | nuclous;ribos ome   | transcription                     |
|  | NM_021432              | 58243                   |                 | chromatin assembly complex  | unknown                           |
|  | NM_008770              | 18417                   | Cldn11          | Integral to plasma membrane;dgh   | cell adh                          |
|  | NM_026592              | 68170                   |                 |   | unknown                           |
|  | NM_010412              | 15184                   | Hdac5           | cytoplasm;histone deacetylase co  | cell cycle                        |
| 2024 B. 104 0 X 0 X 1  | AK007351               | 69038                   |                 | integral to membrane  | unknown                           |
|  | NM_009426              | 22044                   | Trh             | extracellular space;soluble frac  | growth factor (secreted)          |
|  | NM_007591              | 12317                   | Cair            | endoplasmic reticulum lumen;extr  | cell adhesion                     |
|  | AJ 250690              | 00700                   |                 |   | unknown                           |
|  | NM_025747              | 66756                   | Desi-6          |   | unknown                           |
|  | NM_016775              | 13002                   | Dnajc5          | membrane  | translation                       |
|  | NM_023059<br>NM_013615 | 24058<br>18286          | Al256711        | Integral to membrane  | signaling?                        |
|  | NM_010879              | 17974                   | Odf2<br>Nck2    | myosin  | ctsk                              |
|  | NM_018803              | 54526                   | Syt10           | cytoplasm:vesicle membrane  | signating                         |
|  | AK006427               | 69440                   | Jyllo           | integral to membrane;synapse;syn<br>extracellular space   | transport                         |
| and control of the state of the | NM_016789              | 53324                   | Nptx2           | extracellular space;integral to   | unknown<br>Transport              |
|  | BC018162               | 73847                   |                 | and a second a second and a second a second and a second a second and a second and a second and | unknown                           |
|  | NM_010282              | 14593                   | Ggps1           | ribosome  | ilpid metabolism                  |
|  | NM_008958              | 19207                   | Ptch2           | Integral to membrane  | signaling (receptor)              |
|  | NM_030564              | 80751                   | Rnf34           | cytoplasm   | misc                              |
|  | NM_007689              | 12643                   | Chad            | extracellular matrix;extracellul  | unknown                           |
|  | NM_021548              | 59046                   | Arpp19          | cytoplasm   | transport?                        |
| MINIMUM AND  | NM_011660              | 22166                   | Txn1            | vacuole   | transport                         |
|  | AK011457               | 75409                   | S litrk5        | Integral to membrane  | misc                              |
|  | AK005887               | 69354                   | S1c38a4         | Integral to membrane  | trans port                        |
|  | NM_025987              | 67130                   | Ndufa6          | mitochondrion   | metabolism                        |
|  | AK013402               | 109785                  | Pgm3            |   | metabolis m                       |
|  | NM_025839              |                         |                 |   | cell adh                          |
|  | NM_007930              |                         | Enc1            | cytos keleton   | ctsk                              |
|  | NM_013738              |                         | Plek2           | cytos keleton; membra ne; ribos ome   | ctsk                              |
| alian sand bill  |                        | 68193                   | R pl24          |   | translation                       |
| 100000 E00101  | AK011230               | 72136                   |                 | integral to membrane  | ecm                               |
| 200 ann  | NM_016749              |                         | Mybph           | striated muscle thick filament  | cell adhesion                     |
|  | NM_011793              |                         | Banfi           | Integral to membrane; nucleus   | misc                              |
|  | BC003932               | 67278                   | D1 F1-44        |   | иnknown                           |
|  | NM_008847              |                         | Pip5k1b         | plasma membrane   | signaling                         |
|  | AK019059               | 59040                   | Arht1           | Integral to membrane  | signaling                         |
|  | AK014772<br>NM_016772  | 74592                   | Enh1            |   | unknown                           |
|  | NM_025272              |                         | Ech1<br>Atp6v0e | mitochondrion; peroxis ome  | meta bolism                       |
|  | NM_008722              |                         | Npm1            | integral to membrane;membrane fr  | meta bolis m                      |
|  | NM_011622              |                         |                 | nucleolus<br>Colal strak mambrana   | unknown                           |
|  | H . AIA! O ! ! 077     |                         | Tom1            | Golgl stack;membrane  | transport                         |
|  | NM OSENES              | E E T T T T A           |                 | sistor nonconf  |                                   |
|  | NM_025065              |                         | DAF md7980      |   | unknown                           |
|  | AK007653               | 52443                   | D4E rtd786e     | ribosome  | trans ladon                       |
|  | AK007653<br>NM_021504  | 52443<br>59007          | Ngly1           | ribosome<br>cytopias m;nucleus  | transladon<br>protein degradation |
|  | AK007653               | 52443<br>59007<br>26442 |                 | ribosome  | trans ladon                       |

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Figure 32-1

|                     |             |                     |                 |                      | 1         | 1                               |                 |                      |                  |
|---------------------|-------------|---------------------|-----------------|----------------------|-----------|---------------------------------|-----------------|----------------------|------------------|
| BIOLOGICAL FUNCTION | metabolism  | unknown             | metabolism      | transport            | transport | Transport                       | misc            | misc                 | ctsk             |
| LOCALIZATION        |             | extracellular space | mitochondrion   | integral to membrane | vacuole   | extracellular space;integral to | cytoplasm       | integral to membrane | cytoskaleton     |
| GENE                | Pgm3        |                     | Ndufa6          | S lc38a4             | Txn1      | Nptx2                           | Rnf34           | S link5              | Fnc1             |
| <b>Locus</b>        | 109785 Pgm3 | 69440               | 67130           | 69354                | 22166     | 53324                           | 80751           | 75409                | 13803            |
| ACCESS LOCUS        | AK013402    | AK006427            | NM 025987 67130 | AK005887 6           | MM 011660 | NM 016789 53324                 | NM 030564 80751 | AK011457             | NIM 007930 13803 |
|                     | -           |                     |                 |                      |           |                                 |                 |                      |                  |

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| Figure 32-2 | BIOLOGICAL FUNCTION | protein degradation | protein degradation              | metabolism                        | unknown         | transport            | unknown         | translation | mlsc                          | signaling         |
|-------------|---------------------|---------------------|----------------------------------|-----------------------------------|-----------------|----------------------|-----------------|-------------|-------------------------------|-------------------|
|             | LOCALIZATION        | cytopíasm; nucleus  | proteasome core complex (sensu E | integral to membrane; membrane fr | nucleatus       | Golgi stack;membrane | mitochondrion   | ribosome    | integral to membrane; nucleus | plasma membrane   |
|             | GENE                | Ngly1               | Psma5                            | Atp6v0e                           | Npm1            | Tom1                 |                 | D4Ertd786e  | Banfl                         | Plp5k1b           |
|             | rocus               | 59007               | 26442                            | 11974                             | 18148           | 21968                | 67270           | 52443       | 23825                         | 18720             |
|             | ACCESS LOCUS GENE   | MM_021504 59007     | NM_011967 26442                  | NM_025272 11974                   | NM_008722 18148 | NM_011622 21968      | NM_026065 67270 | AK007653    | NM_011793 23825               | - NM_008847 18720 |

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| ESS 1 | LOCUS                | ACCESS LOCUS GENE | LOCALIZATION                 | BIOLOGICAL FUNCTION |
|-------|----------------------|-------------------|------------------------------|---------------------|
| 615   | NM_013615 18286 Odf2 | ZJPO              | mycsin                       | ctsk                |
| 879   | NM_010879 17974 Nck2 | Nck2              | cytoplasm; vesitcle membrane | signaling           |
| 920   | NM_023059 24058 A    | AI256711          | integral to membrane         | signaling?          |
| 14    | VM_025747 66756      |                   |                              | unknown             |

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|             | NO                  |                  |                                  |                                 |                      |                                   |                      |                              |                 |                                   |                 |                                   |                      |                      |                            |                                   |
|-------------|---------------------|------------------|----------------------------------|---------------------------------|----------------------|-----------------------------------|----------------------|------------------------------|-----------------|-----------------------------------|-----------------|-----------------------------------|----------------------|----------------------|----------------------------|-----------------------------------|
| Figure 32-4 | BIOLOGICAL FUNCTION | mlsc             | cell adhesion                    | unknown                         | unknown              | misc                              | transport            | transcription                | transcription   | cell adh                          | unknown         | cell cycle                        | unknown              | signaling (receptor) | unknown                    | apoptosis                         |
|             | LOCALIZATION        | synaptic vesicle | endoplasmic reticulum lumercextr | extracellular space,integral to |                      | Golgi apparatus; extracellular sp | Golgi stack          | transcription factor complex |                 | integral to plasma membrane; tigh |                 | cytoplasm; histone deacetylase co | integral to membrane | plasma membrane      | chromatin assembly complex | cytoplasm; protein kirase CK2 com |
|             | GENE                | S v2c            | Calr                             |                                 | Samd4                | B3galt3                           | Gga1                 | Sitpec                       | Rnf10           | Cidn11                            |                 | Hdac5                             |                      | Gnai2                |                            | Akt1                              |
|             | SNOOT               | 75209            | 12317                            | 63059                           | 74480                | 26879                             | 106039               | 26940                        | 50849           | 18417                             | 68170           | 15184                             | 69038                | 14678                | 58243                      | 11651                             |
|             | ACCESS LOCUS GENE   | AK015921         | NM_007591 12317                  | AK005345                        | AK017081 74480 Samd4 | NM_020026 26879                   | AK015106 106039 Gga1 | NM_012029 26940              | NM_016698 50849 | NM_008770 18417                   | NM_026592 68170 | NM_010412 15184                   | AK007351             | NM_008138 14678      | NM_021432 58243            | NM_009652 11651                   |
|             |                     | -                | E                                |                                 | _                    | j.,                               |                      |                              |                 | -                                 |                 | -                                 | <b>!</b>             | `<br>                |                            |                                   |
|             |                     | -                | ;<br>]                           | in                              | j.                   | •                                 | ~ 4                  | : ·                          | . • •           | -                                 | J               |                                   | },<br> `             |                      |                            | <u> </u>                          |

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| 10050             | ACCESS LOCUS GENE | GENE       | LOCALIZATION                     | BIOLOGICAL FUNCTION  |
|-------------------|-------------------|------------|----------------------------------|----------------------|
| 08377             | NM_008377 16206   | Lrig1      | extracelluar space, mægral to    | muor reignan         |
| NM_007495 11899   | 11899             | Astn1      | integral to membrane             | misc ·               |
| NM_026495 67991   | 67991             |            | transcription factor complex     | unknown              |
| - NM_020590 57436 | 57436             | Gabarapl1  | ріазта тетргапе                  | ctsk                 |
| NM 007529 12032   | 12032             | Bcan       | extracellular matix;extracellul  | signaling / ecm      |
| AJ 276505         | 79202             | Trifisf22? | Integral to membrane             | signaling (raceptor) |
| NM_019477         | 50790             | Fac14      | cytoplasmintegral to membrane    | тепроизт             |
| NM_008325 15932   | 15932             | Idua       | extracellular space;lysosome     | metabolism           |
| ₹ BC014687        | 68964             |            |                                  | unknown              |
| - AB045323        | 52357             | D8Ertd594e | Intercellular junction           | unknown              |
| NM_008230 15186   | 15186             | Hdc        | extrachromosomal circular DNA    | metabolism           |
| NM_007874 13476   | 13476             | Dp1        | integral to membrane             | tumor related        |
| NM_019772 56372   | 56372             |            | integral to membrane             | protein degradation? |
| NM 020293 56863   | 56863             | Cldn9      | extracellular space; integral to | cell adh ?           |
| NM 025299 27366   | 27366             | Txn14      | snRNP US                         | transcription        |
| NM 013645 19293   | 19293             | Pva        | axon; troponin complex           | misc                 |
| NM_008399 16407   | 16407             | ltgae      | cytoskeleton;extracellular matri | immune response      |
| NM_053186 94218   | 94218             | Cnnm3      | voltage-gated potassium channel  | ion channel          |
| MM 007471 11820   | 11820             | App        | Golgi apparatus; coated pitendop | cell adh             |

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Figure 32-6

| BIOLOGICAL FUNCTION |      | cell adhesion          |  | metabolism                       |             | unknown              |           | ctsk               |       | turnor refated |         |
|---------------------|------|------------------------|--|----------------------------------|-------------|----------------------|-----------|--------------------|-------|----------------|---------|
| LOCALIZATION        |      | cytoskelaton           |  | mitochondrial electron transport |             | Integral to membrane |           | actin cytoskeleton |       |                |         |
| GENE                |      | Cathd2                 |  | Uderel                           |             |                      |           | Pls3               |       |                |         |
| 511301              |      | 18163                  | 3  | 22273                            | 2777        | 56154                | 5         | 102866 Pb3         | 2070  | 71323          |         |
| ACCESS LOCIS GENE   | 2000 | NM 008729 18163 Cathd2 | 2 - CO - C | NAM 025407 22273                 | TAIN OF OAK | NAM COSTABLE GETTA   | TOPO TOPO | 80005459           | 20000 | AFCTIONA 71373 | 2171011 |
|                     |      |                        | _  |                                  | _           | Γ                    | _         |                    | ]     |                |         |
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## Fig 33

| ACCESS                                    | Locus  | GENE     | LOCALIZATION                       | BIOLOGICAL FUNCTION      |
|---|--------|----------|------------------------------------|--------------------------|
| NM_009129                                 | 20254  | Scg2     | cytopiasm;extracellular space      | growth factor (secreted) |
| AK003651                                  | 14000  | E tohi2  |                                    | translation              |
| AK008724                                  | 70123  |          |                                    | unknown                  |
| AK008537                                  | 67035  |          | cytoplasm                          | translation              |
| AK003642                                  | 68618  |          | lysosome                           | metabolism?              |
| NM_024173                                 | 66290  | Atp8v1g1 | hydrogen-translocating V-type AT   | transport                |
| NM_010826                                 | 17540  | Mrvi1    | endoplasmic reticulum membrane;i   | transport                |
| 1 NM_031179                               | 81898  | Sf3b1    | spliceosome complex                | transcription            |
| NM_009788                                 | 12307  | Calb1    | cytoplasm                          | misc                     |
| AK011747                                  | 17237  | Mgrn1    | extracellular                      | apoptosis                |
| AK019147                                  | 19084  | Prkar1a  | cAMP-dependent protein kinase co   | misc                     |
| AK005852                                  | 71838  | Phf7     |                                    | unknown                  |
| NM_008292                                 | 15488  | Hsd17b4  | peroxisome                         | lipid metabolism         |
| AK005205                                  | 67129  |          |                                    | unknown                  |
| NM_013614                                 | 18263  | Odc      | mitochondrial inner membrane       | misc                     |
| NM_018855                                 | 104346 | Gas8     | flagellum (sensu Eukarya); microt  | signating                |
| NM_018798                                 | 54609  | Ubqin2   | endoplasmic reticulum membrane     | unknown                  |
| NM_007583                                 | 12300  | Cacng2   | extracellular space;tight juncti   | ion channel              |
| AK021006                                  | 110920 | Stch     | extracellular space                | translation              |
| NM_011310                                 | 20197  | \$100a3  |                                    | trans port               |
| AK012109                                  | 72194  |          |                                    | Unknown                  |
| NM_011443                                 | 20674  | S ox2    | cytoplasm;transcription factor c   | transcription            |
| NM_011986                                 | 26562  | Nedn     |                                    | unknown                  |
| NM_010817                                 | 17463  | Psmd7    | cytosol                            | trenslation              |
| - 1AK004655                               | 74107  |          |                                    | translation .            |
| NM_031248                                 | 83409  |          | lysosome                           | traffic                  |
| 图   | 22628  | Ywhag    |                                    | signaling                |
| M_011116                                  |        | PId3     | Integral to membrane; membrane fr  | me ta bolis m            |
| <b>MM_033370</b>                          |        | Copb1    | G olgi membrane;G olgi vesicle;cyt | transport                |
| NM_009215                                 |        | Sst      | extracellular space                | growth factor (secreted) |
| NM_011810                                 | 23873  | Faim     |                                    | apoptosis                |
| NM_009861                                 | 12540  | Cdc42    | filopodlum                         | signaling                |
| AK004012                                  | 68708  |          | early endosome                     | tumor related            |
| NM_008797                                 |        | Pcx      | mitochondrion                      | meta bolis m             |
| AK010511                                  | 11652  | Akt2     | intracellular, protein kinase CK2  | cell cycle               |
| AF220205                                  | 65116  | Prrg2    | extracellular space; integral to   | unknown                  |
| AK013202                                  | 20467  | S in3b   | nucleus                            | transcription            |
| NM_025302                                 |        | Mrpl2    | extracellular space;mitochondria   | translation              |
| tion and use the later AKO11446           | 70348  |          |                                    | unknown                  |
| 於   |        | Enc1     | cytoskeleton                       | ctsk                     |
| NM_052973                                 |        | S trn3   |                                    | signaling?               |
| AK012847                                  | 72674  |          | Integral to membrane               | unknown                  |
| (注: / / / / / / / / / / / / / / / / / / / | 20597  | S mpd1   | Integral to membrane: lysosome     | me ta bolis m            |
| 上   | 75141  | Rasd2    |                                    | signaling                |
|   |        |          |                                    |                          |

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igure 33-1

| •           |                     |                               |                                 |                                   |                 |                          |                                  |            |                 |
|-------------|---------------------|-------------------------------|---------------------------------|-----------------------------------|-----------------|--------------------------|----------------------------------|------------|-----------------|
| TO LO TO TO | FUNCTION            |                               |                                 |                                   |                 | reted                    |                                  |            |                 |
|             | BIOLOGICAL FUNCTION | metabolism                    | unknown                         | cell cycle                        | ctsk            | growth factor (secreted) | transport                        | unknown    | signaling       |
|             | LOCALIZATION        | integral to membrane;lysosome | extracellular space;integral to | intracellular; protein kinase CK2 | cytos keleton   | extracellular space      | Golgi membrana;Golgi vesícla;cyt |            |                 |
|             | GENE                | Smpd1                         | Prrg2                           | Akt                               | Enc1            | Sst                      | Copb1                            |            | Ywhag           |
|             | Locus               | 20597                         | 65116                           | 11652                             | 13803           | 20604                    | 70349                            | 70348      | 22628           |
|             | ACCESS LOCUS        | NM_011421 20597               | AF220205                        | AK010511                          | NM 007930 13803 | NM_009215 20604          | NM_033370 7                      | AK011446 . | NM_018871 22628 |
|             |                     |                               |                                 |                                   |                 |                          | 1                                |            |                 |
|             |                     | 100 11                        |                                 |                                   |                 |                          |                                  |            |                 |
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Figure 33-2

| BIOLOGICAL FUNCTION | apoptosis       | translation                      |  |
|---------------------|-----------------|----------------------------------|--|
| LOCALIZATION        |                 | extracellular space;mitochondria |  |
| GENE                | Faim            | Mrpi2                            |  |
| rocus               | 23873           | 27398                            |  |
| ACCESS LOCUS GENE   | NM_011810 23873 | NM_025302 27398 Mrpl2            |  |
| 78                  |                 |                                  | The state of the s |

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Figure 33-3

|     | ACCESS          | LOCUS GENE | GENE  | LOCALIZATION                      | BIOLOGICAL FUNCTION |
|-----|-----------------|------------|-------|-----------------------------------|---------------------|
|     | AK012847        | 72674      |       | integral to membrane              | unknown             |
|     | AK015898        | 75141      | Rasd2 |                                   | signaling           |
|     | NM 052973 94186 | 94186      | Strn3 |                                   | s ignaling ?        |
|     | NM 008797 18563 | 18563      | Pcx   | mitochondrion                     | metabolism          |
|     | AK010511 11     | 11652      | Akr2  | Intracellular, protein kinase CK2 | cell cycle          |
| . A |                 |            |       |                                   |                     |

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Figure 33-4

|                            |                     |                                   |          |                                  |                                  |                                | 1           |              |               | ļ                             |
|----------------------------|---------------------|-----------------------------------|----------|----------------------------------|----------------------------------|--------------------------------|-------------|--------------|---------------|-------------------------------|
| NOIT CHILL IT COOK OF COOK | BIOLOGICAL FUNCTION | transcription                     | unknown  | signalbig                        | Ion channel                      | unknown                        | translation | unknown      | apoptasis     | grawth factor (secreted)      |
|                            | LOCALIZATION        | cytoplas m transcription factor c |          | flagellum (sensu Eukarya);microt | extracellular space;tight juncti | endoplasmic reticulum membrane |             |              | extracellular | cytoplasm;extracellular space |
|                            | GENE                | Sox2                              | Phf      | Gas8                             | Cacng2                           | Ubqin2                         | Etohi2      |              | Mgm1          | Scg2                          |
|                            | SNOOT               | 20674                             | 71838    | 104346                           | 12300                            | 54609                          | 14000       | 70123        | 17237         | 20254                         |
|                            | ACCESS LOCUS GENE   | NM_011443 20674                   | AK005852 | NM_018855 104346 Gas8            | NM_007583 12300                  | NM 018798 54609                | AK003651    | AK008724     | AK011747      | NM 009129 20254               |
|                            |                     | -                                 |          | ,<br> -                          | 1                                | ı                              |             | •            | 1 -           | ,                             |
|                            |                     |                                   | ]        |                                  | • • •                            | -,                             |             | سد.<br>سوړان |               | Ţ.                            |
|                            |                     | L                                 | 1        | 1                                | 1                                |                                | _           |              | Ċ             |                               |

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| Figure 33-5 | BIOLOGICAL FUNCTION | lipid metabolism        | unknown             | unknown        | translation          |
|-------------|---------------------|-------------------------|---------------------|----------------|----------------------|
|             | LOCALIZATION        | peroxisome              |                     |                | extracellular space  |
|             | GENE                | Hsd17b4                 |                     |                | Stch                 |
|             | rocus               | 15488                   | 67129               | 72194          | 110920               |
|             | ACCESS LOCUS GENE   | NM_008292 15488 Hsd17b4 | AK005205 67129      | AK012109 72194 | AK021006 110920 Stch |
|             |                     |                         |                     |                | ٠<br>آ               |
|             |                     |                         | ); "<br>;<br>;<br>; |                |                      |
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Figure 33-6

| BIOLOGICAL FUNCTION | ıt                               |                       | ıt                               | notiq                  | Ilsm ?       |
|---------------------|----------------------------------|-----------------------|----------------------------------|------------------------|--------------|
| BIOL                | transport                        | misc                  | transport                        | transcription          | metabolism ? |
| LOCALIZATION        | hydrogen-translocating V-type AT | cytoplasm             | endoplasmic reticulum membrane;i | s plice os ome complex | lysosome     |
| GENE                | Atp6v1g1                         | Calb1                 | Mrvi1                            | Sf3b1                  |              |
| SNOOT               | 66290                            | 12307                 | 17540                            | 81898                  | 68618        |
| ACCESS LOCUS GENE   | NM 024173 66290 A                | NM 009788 12307 Calb1 | NM 010826 17540 Mrvi1            | NM 031179 81898 Sr3b1  | AK003642     |
|                     |                                  | .L.                   | J_<br>                           | . _<br>-               | <u> </u>     |
|                     | 7 to                             |                       |                                  |                        |              |
|                     | 1                                | i                     | 1                                |                        | 1            |

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Figure 34 A



ACCESS LOCUS GENE LOCALIZATION BIOLOGICAL FUNCTION NM\_028770 unknown AK006504 76380 myosin algna ling NM\_007743 12843 Col1a2 collagen; extracellular space ecm NM\_025849 66928 integral to membrane unknown NM\_011772 22781 transcription factor complex Znfn1a4 misc AK012765 69938 S crn1 unknown AK012392 76816 S dccag8 centrosome tmmune response NM 008638 17768 Mthfd2 extracellular space; mitochondrio meta bolis m NM\_008737 18186 Игр extracellular space; integral to cell adh AK016282 75863 unknown AK005138 101867 membrane translation? AK005558 76509 signaling (receptor) X97581 20689 Sali3 nucleus transcription AK010301 spliceosome complex 71973 transcription NM\_016744 18573 Pde1a insoluble fraction meta bolis m NM\_008602 17344 Miz 1 nucleus;septin ring tra na cription NM\_008702 18099 Nik nucleus; protein kinase CK2 compi signaling NM\_007647 12499 Entpd5 endoplasmic reticulum;extracellu mis c AK008163 76523 unknown NM\_022022 63958 Ube4b cytoplas mubiquitin ligase compl protein degradation NM\_011025 18429 Oxt extracellular space signaling (secreted) NM\_023191 66317 heterotrimeric G-protein complex signating? AK006023 Fpgt 75540 misc BC 011482 23943 Mbc2 Integral to membrane unknown AK003656 74775 integral to membrane unknown NM\_016692 16319 Incenn chromosome-, pericentric region; cell cycle Y15910 54004 Diap2 misc NM\_019931 56543 Kcnd3 extracellular space;voltage-gate Transport NM\_019799 56315 Rhcg integral to plasma membrane transport NM\_010826 17540 Mrvi1 endoplasmic reticulum membrane; transport NM\_019575 56214 Scamp4 integral to membrane; synaptic ve traffic NM\_021704 20315 Cxcl12 extracellular space immune response (secreted) AF285577 107815 5 cmi2 tumor related? NM\_021888 60507 Qtt1 misc NM\_053204 111173 Rab6ip2 non-muscle myosin signaling NM\_023503 69260 Ing11 transcription NM\_025921 67028 unknown NM\_021712 20508 Slc18a3 integral to clasma membrane transport NM\_007795 13019 CHT extracellular growth factor (secreted) NM\_011341 20318 S df4 Golgi apparatus;extracellular sp mlsc BC 005600 70231 Goras D2 Goldi membrane unknown NM 007748 12861 Cox6a1 integral to membrane; respiratory metabolism NM\_021555 59053 Вгр16 unknown AK010552 66984 unknown NM\_023041 19298 Pxf integral to membrane; peroxisomal mlsc BC 004012 192185 BC004012 cytosotextrachromosoma i circula metabolis m NM\_023377 170460 Stard5 transport NM\_023370 22295 Cdh23 cilium;extracellular space;integ mlsc S 82853 21915 Dtymk metabolism NM\_009614 11490 Adam15 extracellular matrix;extracellul protein degradation 1714 U85993 319845 extracellular space unknown AF 106621 21855 Timm17b integral to membrane; mitochondri traffic NM\_007761 12909 Crcp signaling (receptor) NM\_007610 12366 Casp2 caspase complex;nucleus apoptosis AK004714 74133 extrace liular space unknown AJ278733 17884 Myh4 myosin;striated muscle thick fil ctsk XB1365 21367 Cntn2 axon cell adh BC 004739 213211 Rnf26 apoptosis NM\_013727 27215 Azi2 cytoplas m signaling AK 004506 68942 unknown NM\_080287 140579 Elmo2 cytoskeleton; membrane signaling

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## Figure 34 B

|  |  | riguic 54 b                |
|--|--|----------------------------|
| " ACCESS" TOCUS" "GENE   | LOCALIZATION   | BIOLOGICAL FUNCTION        |
| AK 006525 70375  | Eggyreight   |                            |
| The control of the co |  | misc                       |
| NM_025806 66857  | extracellular space  | unknown                    |
| NM_028146 72185  | plasma membrane  | unknown                    |
| 图 NM_011040 18510 Pax8   | transcription factor complex   | transcription              |
| NM_010727 16924 Lnx1   | cytoplas m; extracellular s pace   | signating                  |
| 55 NM_025962 67096   | membrane   | Unknown                    |
| NM_008903 19012 Ppap2a   | Integral to plasma membrane;memb   |                            |
|  |  | metabolism                 |
| The state of the s | cytoplasm  | misc                       |
| Mtmr1 NM_016985 53332 Mtmr1  | cytoplasm;plasma membrane  | signaling ?                |
| <b>NM_019705 24105 AL033326</b>  | spliceosoma complex  | protein degradation        |
| NM_016863 14226 Fkbp1b   |  | signating                  |
| NM_024475 79560 BC002236   | proteasome regulatory particle (   | Unknown                    |
| AF 129888 20918 Sui1-rs1   | cytoplasm  |                            |
| AK013511 72900 Ndufy2  |  | translation                |
|  | mitochondrien  | metabolism                 |
| BC 006805 72692  |  | metabolism                 |
| AF092877 19823 Rnf7  | cytoplasm;nucleus  | apoptosis                  |
| NM_019410 18645 Pm2  | actin cytoskelaton   | ctsk                       |
| AK003866 28295 D10Jhu81e   | cell wall;extracellular space;mi   | unknown                    |
| NM_030716 80906 Kcnlp2   | plasma membrane  | ion channel                |
| NM_008734 18183 Nrg3   | extracellular,integral to plas ma  | growth factor (secreted)   |
|  |  | <del></del>                |
|  | membrane   | transport                  |
| NM_007936 13838 E pha 4  | Integral to plasma membrane  | signaling (receptor)       |
| AK007913 69833   | DNA-directed RNA polymerase I co   | transcription              |
| AB030906 29871 Scmh1   | chromatn   | transcription              |
| NM_016737 20867 Stlp1  | Golgi apparatus; nucleus   | misc                       |
| NM_013933 30960 Vapa   | endoplasmic reticulum;integral t   | misc                       |
| NM_011705 22367 Vrk1   | the property of the property o |                            |
| 是现在,一个时间的时间,一个时间的时间,一个时间的时间,一个时间的时间,一个时间的时间,一个时间的时间,一个时间的时间,一个时间的时间,一个时间的时间,一个时间   |  | signa ling                 |
| AK011810 68263 Pdhb  | mitochondrion  | metabolism                 |
| AK010310 67755 Ddx47   | cytoplasm  | misc                       |
| NM_007931 13804 Endog  | extracellular space; mitochondrio  | misc                       |
| NM_011656 22156 Tuft1  | extracellular  | ctsk                       |
| [[] [[] [] NM_013614 18263 Odc   | mitochondrial inner membrane   | misc                       |
| NM_009503 269523 Vcp   | Golgi apparatus ; endoplas mic reti  | transport                  |
| Section 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1  |  |                            |
|  |  | unknown                    |
| AK010425 71957   | mRNA cleavage and polyadenylatio   | unknown                    |
| NM_011674 22239 Ugt8   | extracellular space; integral to   | metabolism                 |
| NM_009215 20604 Sst  | extracellular space  | growth factor (secreted)   |
| NM_008161 14778 Gpx3   | extracellular space  | metabolism                 |
| NM_026068 67279  | nucleus  | unknown                    |
| NM_011072 18643 Pfn1   | actin cytoskeleton   | csk                        |
| partition (1) 11 (1) 12 (1) 12 (1) 12 (1) 13 | · · · · · · · · · · · · · · · · · · ·  |                            |
| NM_025964 67099  | extrachromosomal circular DNA  | unknown                    |
| MM_019913 56551 Txn2   | mitochondrion  | transport                  |
|  | Golgi apparatus;extracellular sp   | tumor related              |
| NM_010313 14697 Gnb5   | heterotrimeric G-protein complex   | signa ling                 |
| NM_008374 16199 II9r   | Integral to plasma membrane  | immune response (receptor) |
| AK003611 67070   |  | unknown                    |
| NM_053074 18226 Nup62  | nuclear pore   | transport                  |
| NM_011917 2412B Xrn2   | nucleus  | transcription              |
| 1  | , acteus   |                            |
| AK01394B 69269 Scnm1   |  | transcription              |
| (3) AR (1) AK (1 | actin cytoskeleton:Integral to m   | transcription              |
| NM_011018 18412 Sqstm1   | cytosol  | protein degradation        |
| AK017020 71241 Dmrtc2  |  | unknown                    |
| MM_013703 22359 Vidir  | coated pitextracellular space;   | signaling                  |
| <b>銀記 AK016786 71804</b>   | ribosome   | илкпомп                    |
| NM_019510 22065 Trpc3  | Integral to membrane   | transport                  |
|  |  |                            |
|  | extrachromosomal circular DNA  | unknown                    |
| AK009447 66700 Vps24   | non-muscle myosin  | ctsk?                      |
| 1  | integral to membrane   | unknown                    |
| NM_011908 24109 Ubi3   |  | unknown                    |
| 0.111 NM_053071 12864 Cox6c  | extracellular space; integral to   | transport                  |
| AF 220355 56747 AI843918   |  | unknown                    |
| NM_011543 21402 Skp1a  | SCF ubiquitin ligase complex;nuc   |                            |
| BC005517 71704 Arhgef3   |  | translation                |
| Manager Manager DO000011 / 11/04 Winder  | cytoplas m   | signaling (GEF)            |
|  |  |                            |

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|-------------------------|---------------------|-------------------------------|---------------------------------|---------------|----------------------|-----------------|-----------------------|---------------------|----------|-----------|-----------------|-------------|-----------------|
| <br>BIOLOGICAL FUNCTION | protein degradation | unknown                       | unknown                         | metabolism    | unknown              | unknown         | unknown               | protein degradation | unknown  | nwknown   | signaling       | translation | mlsc            |
| LOCALIZATION            | cytosol             | extrachromosomal circular DNA | extractiromos omal circular DNA | mitochondrion | integral to membrane |                 |                       | spliceosome complex |          | пірозотне |                 | cytoplasm   | cytoplasm       |
| GENE                    | Sqstm1              |                               |                                 | Ndufv2        |                      | UPI3            | AI843918              | AL033326            | Dmrtc2   |           | Fkbp1b          | Sui1-rs1    | Apg5l           |
| SNOOT                   | 18412               | 73172                         | 64029                           | 72900         | 67387                | 24109           | 56747                 | 24105               | 71241    | 71804     | 14226           | 20918       | 11793           |
| ACCESS LOCUS GENE       | MM_011018 18412     | AK014134 73172                | MM_025964 67099                 | AK013511      | NM_026123 67387      | NM_011908 24109 | AF220355 56747        | MM_019705 24105     | AK017020 | AK016786  | MM_016863 14226 | AF129888    | NM 053069 11793 |
|                         |                     |                               |                                 |               | 5.70                 |                 | A 1000 1000 1000 1000 |                     |          |           |                 |             |                 |

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|-------------|---------------------|--|--|------------------------------|--------------------------|---------------------|---------------------------|-----------------|--------------------|-------------------|-------------------------|-----------------|--------------------|-----------|---------------|------------|----------------------------------|-----------------------------|----------------------------|
| Figure 34-2 | BIOLOGICAL FUNCTION | transport  | unknown  | mlsc                         | growth factor (secreted) | metabolism          | signating?                | unknown         | ctk                | apoptosis         | mlsc                    | ion channel     | ctsk               | transport | transcription | metabolism | growth factor (secreted)         | signaling (receptor)        |                            |
|             | LOCALIZATION        | Golgi apparatus;endoplasmic reti   | mRNA cleavage and polyadenylatio   | mitochondrial inner membrane | extracellular space      | extracellular space | cytoplasm:plasma membrane | nucleus         | actin cytoskeleton | cytoplasminucleus | Golgi apparatus;nucleus | plasma membrane | actin cytoskeleton | membrane  | chromatin     |            | extracellular,Integral to plasma | Integral to plasma membrane |                            |
|             | GENE                | Vcp  |  | Odc                          | Sst                      | Gpx3                | Mtmr1                     |                 | Pfn1               | Rnf7              | Stp1                    | Kcnip2          | P fn2              | Vps11     | Scmh1         |            | Nrg3                             | Epha4                       |                            |
|             | TOCUS               | 269523   | 71957  | 18263                        | 20604                    | 14778               | 53332                     | 67279           | 18643              | 19823             | 20867                   | 90608           | 18645              | 71732     | 29871         | 72692      | 18183                            | 13838                       |                            |
|             | ACCESS LOCUS GENE   | MM 009503 269523   | AK010425   | NM 013614 18263              | NM_009215 20604          | NM 008161 14778     | NM_016985 53332           | NM_026068 67279 | MM_011072 18643    | AF092877          | NM_016737 20867         | NM 030716 80906 | NM 019410 18645    | BC016258  |               | 1          | NM_008734 18183                  | NM 007936 13838             |                            |
|             |                     | The state of the s |  | 17,                          |                          |                     | 154                       | To a            | \$18               |                   |                         |                 | 130                | şi .      | THE STATE     | iei.       |                                  | 1 100                       | BS-192                     |
|             |                     | 100 Miles  | The state of the s |                              |                          |                     |                           | 200             |                    |                   |                         |                 |                    |           |               |            |                                  |                             | 27-2N8<br>201-2N8<br>81-28 |
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| BIOLOGICAL FUNCTION | transcription | transcription                    | transcription   | transport   | signaling   |
|---------------------|---------------|----------------------------------|---|---|---|
| LOCALIZATION        | nucleus       | actin cytoskeleton;integral to m |   | mitochondrion   | heteroutments 6-protein complex                                     |
| GENE                | Xrn2          |                                  | Scnm1   | Txn2  | Gnb5  |
| SNOOT               | 24128         | 243983                           | 69269   | 56551   | 14697   |
| ACCESS              | F. MN 011917  | AK010382                         | AK013948  | NM 019913   | NM 010313 14697 Gnb5  |
|                     | LOCALIZATION  | LOCALIZATION                     | GENE LOCALIZATION  Xrn2 nucleus acth cytoskeletonyintegral to m | LOCALIZATION nucleus actin cytoskeleton;integral to m | LOCALIZATION mucleus actin cytoskeleton;integral to m mitochondrion |

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|---------------------|-----------|------------------------------|-------------------------------|-----------------|----------|----------------------------|-----------------|----------|----------------------------------|---------------------------------|----------------------------------|----------------------|---|----------------------|----------------------|--------|----------------------------------|---------------|----------------------------------|----------------------------------|-----------------------------------|-----------------------------|-----------------|----------------------------------|
| BIOLOGICAL FUNCTION | signaling | misc                         | ecm                           | immune response | misc     | immune response (secreted) | misc            | unknown  | metabolism                       | cell adh                        | protein degradation              | unknown              | signaling?                                    | unknown              | signaling (secreted) | misc   | taffic                           | transcription | mísc                             | signaling                        | metabolism                        | transport                   | tumor related ? | transport                        |
| LOCALIZATION        | myosin    | transcription factor complex | collagen; extracellular space | септосотв       |          | extracellular space        |                 |          | extracellular space;mitochondrio | extracellular space;integral to | cytoplasm;ubiquitin ligase compl | integral to membrane | heterotimeric G-protein complex               | integral to membrane | extracellular space  |        | integral to membrane;synaptic ve |               | Golgi apparatus;extracellular sp | nucleus;protein kinase CK2 compl | integral to membrane; respiratory | integral to plasma membrane |                 | endoplasmic reticulum membrane;i |
| GENE                |           | Znfn1a4                      | Col1a2                        | S dccag8        | Fpgt     | Cxci12                     | Qurt1           | Scrn1    | Mthfd2                           | Nrp                             | Ube4b                            | Mbc2                 |   |                      | Oxt                  | Dlap2  | Scamp4                           | Ing11         | Sdr4                             | ZK                               | Cox6a1                            | Rhcg                        | ScmlZ           | Mrvi1                            |
| LOCUS               | 76380     | 22781                        | 12843                         | 76816           | 75540    | 20315                      | 60507           | 69938    | 17768                            | 18186                           | 63958                            | 23943                | 66317   | 74775                | 18429                | 54004  | 56214                            | 69260         | 20318                            | 18099                            | 12861                             | 56315                       | 107815          | 17540                            |
| ACCESS LOCUS        | AK006504  | NM 011772 22781              | NM 007743 12843               | AK012392        | AK006023 | NM_021704 20315            | NM_021888 60507 | AK012765 | NM_008638 17768                  | NM_008737                       |                                  | BC011482             | 1   | AK003656             | NM 011025 18429      | Y15910 | 375                              | NM_023503     | NM_011341 20318                  | NM_008702 18099                  | NM_007748 12861                   | NM_019799                   | AF285577        | MM 010826                        |
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|                     |           | . ř                          |                               | . <u>.</u>      | l        | :<br>::                    | :               | j<br>    | <u></u>                          | ١.                              |                                  | 3                    | -   | ?                    | ;                    | <br>.: |                                  |               |                                  | ;                                | į.                                |                             |                 |                                  |
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| - 63                |           |                              |                               |                 |          |                            |                 |          |                                  |                                 |                                  |                      |   |                      |                      |        |                                  |               |                                  |                                  |                                   |                             |                 |                                  |

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|           | ACCESS LOCUS GENE | SUCOL  | GENE     | LOCALIZATION                       | BIOLOGICAL FUNCTION  |
|-----------|-------------------|--------|----------|------------------------------------|----------------------|
|           | MINA DOTEKE KONKO | 50053  | Bro16    |                                    | unknown              |
|           | NIM OLISS         | 10000  |          |                                    | unknown              |
|           | * AND 10332       | 21267  | Cutu 2   | axon                               | cell adh             |
|           | V01303            | 10017  | Cilair   |                                    | apoptosis            |
| - January | BC004739          | 117517 | KUIZO    |                                    |                      |
|           | NM 023041 19298   | 19298  | Pxf      | Integral to membrane; peroxisomal  | misc                 |
|           | Prondot?          | 192185 | BC004012 | cytosol; extrachromosoma I circula | metabolism           |
|           |                   | 123E6  | Casp2    | caspase complex; nucleus           | apoptosis            |
|           | AK 004714         | 74133  |          | extracellular space                | unknown              |
|           | NM 007761 12909   | 12909  | Creb     |                                    | signating (receptor) |
|           | A 1278733         | 17884  | Mvh4     | myosin;striated muscle thick fil   | ctsk                 |
|           | CC1017CV          |        | (        |                                    |                      |

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|     | ACCESS          | ACCESS LOCUS GENE | GENE  | LOCALIZATION        | BIOLOGICAL FUNCTION  |
|-----|-----------------|-------------------|-------|---------------------|----------------------|
|     | AK016282 75863  | 75863             |       |                     | unknown              |
| j   | AK005138 101867 | 101867            |       | тетргале            | trans lation ?       |
| ļ., | AK005558 76509  | 76509             |       |                     | signaling (receptor) |
|     | X97581          | 20689 Sall3       | Sali3 | nucleus             | transcription        |
|     | AK010301 71973  | 71973             |       | spilceosome complex | trans cription       |

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| BIOLOGICAL FUNCTION | unknown   | transcription                    | ctsk?              | unknown  | transcription                    | signaling?             | metabolism ? | cell cycle   | signaling                       | metabolism    | misc              | transcríption  | unknown  | unknown  | signaling | metabolism          | unknown  | unknown  | transcription                | unknown  | signaling (receptor)             | unknown                      | signaling? | umor related | unknown  | signaling?                       | ctsk                           |
|---------------------|-----------|----------------------------------|--------------------|----------|----------------------------------|------------------------|--------------|--|---------------------------------|---------------|-------------------|--|----------|----------|-----------|---------------------|----------|----------|------------------------------|----------|----------------------------------|------------------------------|------------|--------------|--|----------------------------------|--------------------------------|
| LOCALIZATION        | тетbrале  | Golgi apparatus;heterotrimeric G | cornifled erwelope | nucleus  | small nucleolar ribonucleoprotel | integral to membrane ? |              | elpulds  | extracellular space;integraf to | mitochondrion | cytoplasm;muclaus | chromatin;nucleus  |          |          | nucleus   | extracellular space |          |          | transcription factor complex |          | extracellular space;plasma membr | mitochondrial outer membrane | cytoplasm  |              |  | heterotrimeric G-protein complex | actin cytoskeleton;microvillus |
| GENE                |           | Rgs19                            | S prr3             |          | Snrpd2                           | Caml?                  |              | Prc1   | Sema7a                          |               | Gnefr             | Cbx4   |          |          | Senp2     | Car10               |          |          | Prox1                        |          | R tn4r                           |                              | S100a5     |              |  |                                  | Rdx                            |
| LOCUS               | 68152     | 56470                            | 20766              | 71597    | 107686                           | 12328                  | 69748        | 233406   | 20361                           | 72479         | 27414             | 12418  | 68047    | 50724    | 75826     | 72605               | 74347    | 75075    | 19130                        | 217038   | 62079                            | 69903                        | 20199      | 74315        |  | 66317                            | 19684                          |
| ACCESS LOCUS        | NM_026583 | NM 026446                        | NM_011478          | AK018615 | AK007389                         | AF078112               | AK010387     | AF408435   | NM_011352                       | NM_024255     | NM_013789         | NM_007625  | BC017625 | AK010234 | NM_029457 | BC017606            | AK014579 | AK015818 | -                            | BC005625 | NM_022982                        | AK011557                     | 1~         | AK014408     | MM_031879  |                                  | NM 009041                      |
| (i                  | * :       |                                  |                    |          |                                  |                        |              | The second secon |                                 |               |                   | Notice of the last |          |          |           | 2 gla et.           |          |          |                              |          |                                  |                              |            |              | The state of the s | i .                              |                                |

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|  | II al berber .as wron  |                |                  |   | Figure 35 B                             |
|--|------------------------|----------------|------------------|---|---|
| ۵  | 1. 张扬以上                | Locus          | GENE             | LOCALIZATION  | BIOLOGICAL FUNCTION                     |
|  | AK014338               | 74840          | Armet            | extracellular space                                   | tumor related                           |
|  |                        | 11910          | At/3             | transcription factor complex                          | transcription                           |
|  | AK01197B               | 269003         |                  |   | unknown                                 |
|  | NM_025456              | 66266          |                  |   | unknown                                 |
|  | NM_009092              | 20068          | Rps17            | cytosolic small ribosomal subuni                      | translation                             |
|  | NM_031179              | 81898          | S13b1            | spliceosome complex                                   | transcription                           |
|  | L34676<br>AK011541     | 11784<br>71810 | Apbe2            |   | signaling                               |
|  | NM_019929              | 20610          | S                |   | unknown                                 |
|  | AK005139               | 68262          | Smt3h1<br>Agpat4 | law goal to man have                                  | cell cycle                              |
|  | AK016520               | 71745          | Cul2             | Integral to membrane nuclear ubiquitin ligase complex | lipid metabolism                        |
|  | NM_019667              | 56324          | Stam2            | cytoplasm   | tumor related - a poptosis - cell cycle |
|  | AK018132               | 74008          | - 45.772         | lysosome  | signaling<br>signaling                  |
|  | NM_011929              | 26372          | Clcn6            | Integral to plasma membrane                           | lon channel                             |
|  | AK005619               | 72215          |                  |   | unknown                                 |
|  | AK017214               | 71323          |                  | ·   | tumor related                           |
|  | AK009584               | 69639          | E xosc8          | exosome (RNase complex);nucleus                       | transcription                           |
|  | AK020377               | 67791          |                  |   | unknown                                 |
|  | AK008071               | 76769          |                  |   | unknown                                 |
|  | AK010939               | 68196          | Hsbp1            | extrecellular, nucleus                                | transcription                           |
|  | AK007546               | 110052         | Dek              | nucleus   | transcription                           |
|  | BC 005603<br>NM_026061 | 68776          | Taf11            | transcription factor TFIID compl                      | transcription                           |
|  | NM_023055              | 67264<br>65962 | Ndufb8           | extracellular space; integral to                      | meta bolis m                            |
|  | NM_021382              | 21338          | Sic9a3r2         | apical plasma membrane                                | signaling?                              |
|  | 1                      | 66999          | Тасг3            | integral to membrane;plasma memb                      | signaling (receptor)                    |
|  | BC 002199              | 211556         | BC002199         | extracellular   | unknown                                 |
|  | AF254416               | 64450          | Gpr85            | Integral to plasma membrane                           | unknown                                 |
|  | NM_027493              | 56249          | Actr8            | actin cytos keletori                                  | signaling (receptor)                    |
|  | NM_025834              | 66901          | Proz             | extrace IIular space                                  | mlsc                                    |
|  | AK012087               | 70028          |                  |   | unknown                                 |
|  | AK016572               | 74411          |                  | integral to membrane                                  | unknown                                 |
|  | BC013471               | 77056          |                  | Integral to membrane                                  | lipid metabolism ?                      |
|  | AK005251               | 68975          |                  | mediator complex                                      | transcription                           |
| <b>新文建制</b> (14)   | NM_021877              | 15460          | hr               | nuclear pore  | transcription                           |
|  | BC003922               | 52615          | D11Ertd530e      | nucleus   | unknown                                 |
|  | NM_027722<br>NM_024173 | 71207<br>66290 | AtaCut-1         | intracellular; membrane                               | traffic                                 |
|  | NM_008187              | 14894          | Аф6v1g1<br>Gtl3  | hydrogen-translocating V-type AT                      | transport                               |
|  | NM_013535              | 14790          | Grcc10           | heterotrimeric G-protein complex                      | transcription?                          |
|  | NM_011069              | 18632          | Pex11b           | integral to membrane; Integral to                     | unknown                                 |
|  | NM_008889              | 18938          | Ppp1r14b         | magar w membare, megrar w                             | misc                                    |
|  | NM_007836              | 13197          | Gadd45a          | nucleus;ribosome                                      | transcription<br>cell cycle             |
| All a 7: STEELER   | NM_009331              | 21414          | Tcf7             | transcription factor complex                          | transcription                           |
|  | AK017750               | 70623          |                  |   | unknown                                 |
|  | NM_011246              | 19419          | Rasgrp1          | nucleosome  | signaling                               |
|  | NM_013859              | 29805          | ORF6             |   | unknown                                 |
| 1900 COLO GRANT DE LA TRUE CA  | AK013632               | 72894          |                  |   | unknown                                 |
|  | BC005494               | 216157         | ORF61            |   | unknown                                 |
|  | NM_010837              | 17760          | Mtap6            | microtubule associated complex                        | ctsk                                    |
| THE PARTY OF THE P | NM_008019              | 56196<br>14225 | Ttrap<br>Fkbp1a  | cytoplasm   | signaling                               |
| 17 11 11   | AK017226               | 75734          | гкорта           | cytoplasm; membrane                                   | transport, translation                  |
|  | NM_025766              |                |                  | Integral to membrane                                  | unknown                                 |
|  | AK003524               | 71784          |                  |   | Immune res ponse                        |
|  | NM_009030              | 19646          | R bbp4           | chromatin assembly complex                            | unknown<br>cell cycle                   |
|  | AK013727               | 14397          | Gabra4           | integral to plasma membrana                           | signaling                               |
|  | NM_013680              |                | S yn1            | synapse;synaptic vesicle                              | transport                               |
|  | NM_021430              |                |                  | late endosome   | unknown                                 |
|  | NM_007637              | 12465          | C ct5            | chaperonin-containing T-complex                       | translation                             |
|  | AK014834               | 75778          |                  |   | unknown                                 |
|  | 基 AK012304             | 72612          |                  |   | unknown                                 |
| 1 150 COM (1971) 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1   | COST BIRM COECOSE      | 66904          | Pccb             | biotin carboxylase complex;extra                      |   |
|  | III NM_025835          | 00904          | 1 000            | bloan sarboxylase complex,exta                        | metabolism                              |

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| Figure 35-1 | BIOLOGICAL FUNCTION | unknown         |
|-------------|---------------------|-----------------|
|             | LOCALIZATION        |                 |
|             | GENE                |                 |
|             | LOCUS               | 75734           |
|             | ACCESS LOCUS GENE   | MAK017226 75734 |

| BIOLOGICAL FUNCTION | unknown        | transport, translation | unknown  | signaling (receptor)        | unknown  | csk                            | mlsc                | transcription                | signaling       | unknown  | signaling       |                                    |
|---------------------|----------------|------------------------|--|-----------------------------|----------|--------------------------------|---------------------|------------------------------|-----------------|----------|-----------------|------------------------------------|
| LOCALIZATION        |                | cytoplasmmembrane      | extracellular  | integral to plasma membrane |          | microtubule associated complex | extracellular space | transcription factor complex | nucleosome      |          | cytoplasm       |                                    |
| GENE                |                | Fkbp1a                 | BC002199   | Gpr85                       | ORF61    | Mtap6                          | Proz                | Tcf                          | Rasgrp1         |          | Ттар            |                                    |
| Locus               | 75734          | 14225                  | 211556   | 64450                       | 216157   | 17760                          | 66901               | 21414                        | 19419           | 70623    | 56196           | ,                                  |
| ACCESS LOCUS GENE   | AK017226 75734 | NM_008019 14225        | BC002199   | AF254416                    | BC005494 | MM_010837 17760                | NM_025834 66901     | MN 009331 21414              | MM 011246 19419 | AK017750 | NM 019551 56196 | Z61-28                             |
| ۱ ~                 |                |                        | The state of the s |                             |          |                                |                     |                              |                 |          |                 | 81-2N8<br>27-2N8<br>81-28<br>81-28 |

|             | ١                   | 1            | 1                | ١            | 1                                | 1             | ١                    |
|-------------|---------------------|--------------|------------------|--------------|----------------------------------|---------------|----------------------|
| Figure 35-2 | BIOLOGICAL FUNCTION | unknown      | cell cycle       | unknown      | тізс                             | transcription | Immune response      |
|             | LOCALIZATION        |              | nucleus;rlbosome |              | integral to membrane;integral to |               | integral to membrane |
|             | GENE                | ORF6         | Gadd45a          | Grcc10       | 011069 18632 Pex11b              | Ppp1r14b      |                      |
|             | rocus               | 29805        | 13197            | 14790        | 18632                            | 18938         | 66784                |
|             | CCESS LOCUS GENE    | 013859 29805 | 007836 13197     | 013535 14790 | 011069                           | 008889 18938  | 025766 66784         |

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| 81-28   |
| 261-SN8 |
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| OL-CNG  |

| Figure 35-3 | BIOLOGICAL FUNCTION | unknown  | unknown              | translation                     | unknown         | transcription    | lipid metabolism ?   | unknown | илкломп  | metabolism                       | transport                |
|-------------|---------------------|----------|----------------------|---------------------------------|-----------------|------------------|----------------------|---------|----------|----------------------------------|--------------------------|
|             | LOCALIZATION        |          | integral to membrane | chaperonin-containing T-complex | late endosome   | mediator complex | Integral to membrane |         |          | biotin carboxylase complex;extra | syrapse;synaptic vesicle |
|             | GENE                |          |                      | Cct5                            |                 |                  |                      |         |          | Pccb                             | Syn1                     |
|             | LOCUS               | 70028    | 74411                | 12465                           | 75695           | 68975            | 77056                | 75778   | 72612    | 66904                            | 20964                    |
|             | ACCESS LOCUS GENE   | AK012087 | AK016572             | NM_007637 12465                 | MN 021430 75695 | AK005251         |                      | 1       | AK012304 | NM 025835 66904                  | MM_013680 20964          |
|             | -8                  |          |                      |                                 |                 |                  |                      |         |          |                                  |                          |

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| 81-28   |
| BNS-192 |
| BNS-72  |
| DM2-10  |

|          |            |                  |                 |                   |         |                                  | Figure 35-4         |
|----------|------------|------------------|-----------------|-------------------|---------|----------------------------------|---------------------|
| 25<br>29 |            |                  | ACCESS          | ACCESS LOCUS GENE | GENE    | LOCALIZATION                     | BIOLOGICAL FUNCTION |
| L        | .,,        | ·                | - AK007389      | 107686            | Srupd2  | small nucleolar ribonucleoprotei | transcription       |
|          |            | ٠. ا             | AF078112        | 12328             | Caml? - | integral to membrane ?           | signaling ?         |
|          | 19-1-4-    |                  | AK014579        | 74347             |         |                                  | unknown             |
| <u></u>  | • •        |                  | BC017606        | 72605             | Car10   | extracellular space              | metabolism          |
|          |            | 1                | AK015818        | 75075             |         |                                  | unknown             |
|          | !<br>p: 4. | i L              | AK010234 50724  | 50724             |         |                                  | unknown             |
|          | · · ·      |                  | NM 029457 75828 | 75828             | Senp2   | rucleus                          | signaling           |
| _        | vie        | ا<br>د د<br>سورت | AK010387        | 69748             |         |                                  | metabolism ?        |
| ·        |            | *.               | AF408435        | 233406 Prc1       | Prc1    | spindle                          | cell cycle          |
| <u>!</u> |            |                  | NM 011352 20361 | ı                 | Sema7a  | extracellular space; integral to | signathg            |
| _]       |            | 1                |                 |                   |         |                                  |                     |
| 81.      | ۲5         | 81.<br>S7.       | <b>76</b> !     |                   |         |                                  |                     |
| - 51     | L-S        | ·\$8             | L-S             |                   |         |                                  |                     |
| /I 8     | 18         | 3                | g               |                   |         |                                  | •                   |

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Figure 35-5

BIOLOGICAL FUNCTION ion channel signaling signaling integral to plasma membrane LOCALIZATION Іуѕоѕоте cytoplasm Clen6 Stam2 ACCESS LOCUS GENE AK018132 74008 NM\_011929 26372 NM\_019667 56324

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|             |                     | 1        | 1               | 1               | 1                            |                     | 1                              | 1               | İ                 | 1              |
|-------------|---------------------|----------|-----------------|-----------------|------------------------------|---------------------|--------------------------------|-----------------|-------------------|----------------|
| Figure 35-6 | BIOLOGICAL FUNCTION | ипклоwп  | unknown         | unknown         | transcription                | tumor related       | ctsk                           | metabolism      | mlsc              | unknown        |
|             | LOCALIZATION        |          |                 |                 | transcription factor complex | extracellular space | actin cytoskeleton;microvillus | mitochondrion   | cytoplasm;nucleus |                |
|             | GENE                |          |                 |                 | Att3                         | Armet               | Rdx                            |                 | Gnefr             |                |
|             | SNOOT               | 269003   | 66266           | 217038          | 11910                        | 74840               | 19684                          | 72479           |                   | 68047          |
|             | ACCESS LOCUS GENE   | AK011978 | NM_025456 66266 | RC005625 217038 | NM 007498 11910              | AK014338 74840      | NM 009041 19684                | NM 024255 72479 | NM_013789 27414   | BC017625 68047 |
|             |                     | F        | L               |                 | -                            |                     |                                | Γ               | 1.                | 1              |
|             |                     |          |                 |                 |                              |                     | ì                              |                 |                   |                |

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| ļ                   |           |                      |                   |                     | -       |               | 1        |                                  | 1        | İ                                 |                                 |            | 1                                | 1                                 |                                  | 1       |                      |                                  | 1          | 1                                 |            |          |                                  | 1               | 1                |         |
|---------------------|-----------|----------------------|-------------------|---------------------|---------|---------------|----------|----------------------------------|----------|-----------------------------------|---------------------------------|------------|----------------------------------|-----------------------------------|----------------------------------|---------|----------------------|----------------------------------|------------|-----------------------------------|------------|----------|----------------------------------|-----------------|------------------|---------|
| BIOLOGICAL FUNCTION | signaling | trans port           | cell cycle        | protein degradation | unknown | mßc           | unknown  | misc                             | mlsc     | protein degradation               | transport                       | misc       | cell cycle                       | transport                         | metabolism                       | unknown | transport metabolism | metabolism                       | metabolism | теtabolism                        | unknown    | unknown  | transport                        | unknown         | transcription    | unknown |
| LOCALIZATION        | cytoplasm | Integral to membrane | cytoplasm;nucleus | cytopias m;nucleus  |         | extracellular |          | cytosolic large ribosomal subuni | membrane | extracellular matrix; extracellul | voltage-gated potassium channel | cytoplasm  | atpha DNA polymerase-:primase co | Golgi trans face; clathrin vesicl | aspartate carbamoyitransferase c |         | integral to membrane | endoplasmic reticulum;extracellu |            | extracellular space; mitochondrio |            |          | endoplasmic reticulum;integral t | plasma membrane | chromath;nucleus |         |
| GENE                | Ncoa1     |                      |                   | Prep                |         | Trace         |          |                                  | Cpne8    | Timp4                             | Kcnk2                           | Rabggtb    | Rag2                             | Ap4s1                             | Cad                              | Usmg4   | Atp8a1               | Minpp1                           | Ndufb5     | Ndufa1                            |            |          | Sec61g                           | Rabgefi         | Trim28           |         |
| Snoon               | 17977     | 89899                | 66214             | 19072               | 67788   | 233835        | 72880    | 67671                            | 66871    | 110595                            | 16526                           | 19352      | 19374                            | 11782                             | 69719                            | 83679   | 11980                | 17330                            | 66046      | 54405                             | 68115      |          | 20335                            | 56715           | 21849            | 67157   |
| ACCESS              | 1         | AK004586             | 1                 |                     |         | 1             | AK013604 | NM 023372                        |          | l <sub>o</sub>                    |                                 |            | 009020 MM                        |                                   |                                  | -       | NM 009727            | NM 010799                        | NM 025316  | NM 019443                         | - AK007831 | AB030178 | NM 011343                        | NM 019983       |                  |         |
|                     |           |                      | 1                 |                     |         |               | + .      |                                  |          |                                   | 1                               | TT COMMENT |                                  |                                   | j                                |         |                      |                                  |            |                                   |            | 4        |                                  | -               |                  |         |

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BNS-18



## Figure 36 B

| ∤     |                |             |         |                        |               |  |                                    | rigare 50 b                    |
|-------|----------------|-------------|---------|------------------------|---------------|--|------------------------------------|--------------------------------|
| .4 \$ | Ned II /       | "HOR" "AL   | P 484P  | A,β,β,Ε,β,β,           | <b>ĽÖĊÜŚ™</b> | GENE                                   | LOCALIZATION                       | · BIOLOGICAL FUNCTION          |
|       | 100            | 9 . 1       | X       | 13721                  | 15416         | Hoxb8                                  | transcription factor complex       | transcription                  |
|       | 16.4           | 100         | ΔN      |                        | 17748         | Mtl                                    | cytosotiysosome                    | signating?                     |
|       |                |             | N       | M_011870               | 23991         | CIb1                                   | synaptic vesicle                   | signaling                      |
|       | S 10 1         |             | - P - P |                        | 20184         | Rxrip110                               |                                    | signaling (receptor)           |
|       |                |             | N       | M_009738               | 12038         | Bche                                   | plasma membrana                    | mlsc                           |
|       |                |             |         | K004341                | 68845         |  | membrane                           | unknown                        |
| cas   |                | 3.0         |         | M_030749               | 81500         |  | endoplasmic redculum;extracellu    | trans port                     |
|       | 6. 68          |             |         | M_023197               | 66356         |  | integral to membrane               | unknown                        |
| -1-1  |                |             | rela    | M_023043               | 26434         | Prnd                                   |                                    | misc                           |
|       | STATE OF       | 1           |         | K008749                | 66132         |  |                                    | unknown                        |
| 13.1  |                | 2.7         |         | M_031261               | B3457         | Fthl17                                 | ferritin complex                   | misc                           |
|       |                |             |         | 134173                 | 12946         | Crry                                   | membra ne                          | immune response (receptor)     |
|       | T. V.          |             | T A     | K010654                | 72425         |  | katanin                            | unknown                        |
| 127   |                |             | -       | K005056                | 66897         | **                                     | membrane                           | trans lation                   |
| 100   | 137            |             | N       | M_028122               | 108052        | Sic14a1                                | integral to membrane               | transport                      |
|       |                | 150         | N       | M_007620               | 12408         | Cbr1                                   | cytosol                            | meta balis m                   |
|       | RA MA          |             | P       | F 276975               | 192200        | Swam2                                  | extracellular space                | metabolism                     |
|       |                |             | ~~~     | M_022995               | 65112         |  | Integral to membrane               | misc                           |
|       |                | 1           | /       | K011396                | 234729        | D8Wsu151e                              |                                    | unknown                        |
|       |                | 100         | //      | K006273                | 69441         |  |                                    | unknown                        |
|       |                | 374         | . 1     | IM_010412              | 15184         | Hdac5                                  | cytoplasm;histone deacetylase co   | cell cycle                     |
|       | 7.77           |             | 1       | K020284                | 77669         |  |                                    | signaling (GEF) ?              |
|       | 時代一日           |             | 1       | M_022886               | 64929         | Scel                                   | cytoplasm                          | misc                           |
|       |                |             | 1       | M_016908               | 53420         | S yt5                                  | Integral to membrane;synapse;syn   | traffic                        |
|       |                | 3m          |         | 086949                 | 18845         | Pixna2                                 | extracellular space;integral to    | signating                      |
|       |                |             |         | AK 005159              | 72017         |  | extracellular s pace               | trans port                     |
| 3     |                |             |         | VM_029716              | 108699        | Chn1                                   | cytoplas m                         | signaling                      |
|       | ME III         |             | Щ       | AK005099               | 6B970         |  | heterotrimeric G-protein complex   | unknown                        |
| 3     |                |             |         | VM_009730              | 11990         | Atrn                                   | extracellular space;integral to    | cell adh (receptor)            |
|       | 11133          | 7111        |         | NM_026235              | 67557         |  | nucleus;viral nucleocapsid         | unknown                        |
|       |                |             | 37:17 W | AK002772               | 66425         |  |                                    | unknown                        |
| 1     |                |             | -       | NM_007945              | 13860         | E ps8                                  | cytoplasm                          | protein degradation            |
|       |                |             | 1       | AK018327               | 76206         |  | integral to membrane               | unknown                        |
|       |                | HAU         |         | AK005069               | 71767         | ······································ |                                    | protein degradation?           |
|       |                |             | 10 TUE  | AK020702               | 78428         |  |                                    | unknown                        |
|       |                |             | 4.7     | AK011862               | 28018         | D7Wsu128e                              |                                    | protein degradation ?          |
|       |                |             |         | AF 090738              | 16368         | lrs2                                   |                                    | signaling (receptor)           |
|       |                |             |         | NM_008972              | 19231         | Ptma                                   | nucleus ; ribosome                 | translation                    |
| 111   |                | 1. 6        |         | AF334612               | 170761        | Pdzk2                                  | actin cytoskeleton                 | signaling                      |
| 73.0  |                |             | 11.00   | NM_013638              | 19120         | Prm3                                   | nucleos ome; nucleus               | cell cycle                     |
|       |                |             | -       | AK016671               | 74412         | Gle11                                  |                                    | Transport                      |
|       |                |             |         | NM_031162              |               | C d3z                                  | Integral to membrane; plas ma memb | Immune response                |
| 19    |                |             |         | AF 293079              | 18360         | Olfr6                                  | integral to membrane               | signaling                      |
| 1135  | , Aliceira     | 300         |         | NM_011305              |               | Rxra                                   | transcription factor complex       | transcription                  |
| 24    |                |             |         | NM_023662<br>NM_011500 |               | Pcm1                                   | pericentriolar material            | cell cycle                     |
| 1     |                | 707         | 鼲       | NM_025855              |               | Strn<br>Eabdol                         | cytoplasm                          | transcription                  |
|       |                |             |         | NM_025655<br>NM_009647 |               | E chdc1<br>Ak4                         | mitochondrion                      | unknown                        |
| 1.4   | <b>i</b> Litat | RÓ          | (Prince | AK008111               | 75599         | MK4                                    | mitochondrion<br>membrane          | metabolism                     |
|       |                | arg<br>Ma   |         | NM_008078              |               | Gad2                                   |                                    | cell adh                       |
| WI    |                | 戦闘・<br>震闘よう | 開繡      | AK017044               | 71304         | Gadz                                   | extrachromosomal circular DNA      | metabolism                     |
| 1     |                | 8128 P      |         | NM_031156              |               | lde                                    | extracellular space; peroxisome; s | unknown<br>protein degradation |
|       | 14031          |             |         | NM_009237              |               | S ox3                                  | transcription factor complex       | promin degradation             |
| 1     | inser<br>Life  |             |         | NM_011512              |               | S urf4                                 | endoplasmic reticulum membrane;i   |                                |
| h     | J. W. MI       | المالين الأ | "妈妈     | NM_008497              |               | Lhb                                    | extracellular space                | growth factor (secreted)       |
|       |                |             |         | AK010312               | 76483         | E110                                   | Integral to membrane               | unknown                        |
|       | ud 1985        |             |         | NM_019657              |               | Hsd17b12                               | Integral to membrane;microsome     | metabolism                     |
| β     |                |             | -       | AK007994               | 72042         | Cotl1                                  | cytoskeleton                       | ctsk                           |
| i     |                |             |         | NM_009088              |               | Ripk1                                  | -3                                 | apoptosis                      |
|       | W ME AND       |             |         | AK002416               | 68350         | р                                      | Integral to membrane;lateral pla   | transport?                     |
| 7     |                | £ E         | 1111111 |                        |               | Mcpt6                                  | extracellular space                | · protein degradation          |
|       |                | <b>FIG.</b> |         | NM_026154              |               |  | mitochandrial large ribosomal su   | misc                           |
| ŗ     | 1              |             | 2) 1 4  |                        |               | Tst                                    | mitochondrial matrix               | metabolism                     |
| _     |                |             |         |                        | <del></del>   |  |                                    |                                |

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|---------------------|---------------------|---|----------------------------------|----------------------------------|-----------------------|-----------------------|--------------------------|---------------------------------|----------------|--|------------------------------------|--|
| BIOLOGICAL FUNCTION | transport           | cell adh (receptor)                     | misc                             | transport?                       | signaling             | protein degradation   | grawth factor (secreted) | metabolism                      | cell adh       | metabolism   | traffic                            | signaling  |
| LOCALIZATION        | extracellular space | extracellular space; integral to        | mitochondrial large ribosomal su | Integral to membrane;fateral pla | cytoplasm             | extracellular space   | extracellular space      | Integral to membrane; microsoma | membrane       | extractromosomal circular DNA                      | integral to membrane; synapse; syn | extrace(tular space;integral to  |
| GENE                |                     | Atrn                                    | Mrp110                           |                                  | Chn1                  | Mcpt6                 | CPB                      | Hsd17b12                        |                | Gad2   | Syt5                               | Divns?   |
| rocus               | 72017               | 11990                                   | 107732                           | 68350                            | 108699                | 17229                 | 16866                    |                                 | 75599          | 14417  | 1                                  | 10015  |
| ACCESS LOCUS GENE   | AK005159            | 1                                       | NM_026154 107732                 | AK002416                         | NM 029716 108699 Chn1 | NM 010781 17229 Mcpt6 | NM 008497 16866          | NM 019657 56348                 | AK008111 75599 | NM_008078 14417                                    | NM_016908 53420                    | 000000   |
|                     |                     | Anna Anna Anna Anna Anna Anna Anna Anna |                                  |                                  |                       |                       |                          |                                 |                | (2000) 100 (C) (C) (C) (C) (C) (C) (C) (C) (C) (C) |                                    | The state of the s |

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| NCTION              |                      |           |                    |         |                      |                      |                      |                 |                         |                      |        |
|---------------------|----------------------|-----------|--------------------|---------|----------------------|----------------------|----------------------|-----------------|-------------------------|----------------------|--------|
| BIOLOGICAL FUNCTION | protein degradation? | Transport | signaling          | unknown | cell cyclo           | unknown              | signaling (receptor) | unknown         | cell cycle              | protein degradation? |        |
| LOCALIZATION        |                      |           | actin cytoskeleton |         | nucleos ome; nucleus | Integral to membrane |                      | mitochondrion   | pericentriolar material |                      |        |
| GENE                |                      | Gle11     | P dzk2             |         | Prm3                 |                      | lrs2                 | Echdc1          | Pcm1                    | D7Wsu128e            |        |
| Locus               | 71767                | 74412     | 170761             | 78428   | 19120                | 76206                |                      | 52665           | 18536                   | 28018                |        |
| ACCESS LOCUS GENE   | 04005069             | i         | 1                  | 1       | ۱                    | AK018327             | 1                    | MM 025855 52665 | NM 023662 18536         | - AK011862           | 761-88 |
|                     |                      |           |                    |         |                      |                      |                      |                 |                         |                      | 81-28  |

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| BIOLOGICAL FUNCTION | 1     | Signating                    |  | unknown                          |        | ctsk                |   | unknown              |     |  |
|---------------------|-------|------------------------------|--|----------------------------------|--------|---------------------|---|----------------------|-----|--|
| LOCALIZATION        |       | cytoplasm                    |  | heterotrímeric G-protein complex |        | cytoskeleton        |   | integral to membrane |     |  |
| GENE                |       | Chn1                         |  |                                  |        | Coff                | .555  |                      |     |  |
| 1000                |       | 108699                       |  | 68970                            | 200    | 72047               | 120.2   | 76483                | 200 |  |
| ACCESS LOCUS GENE   | 20200 | Chn1 Chn1 079716 108699 Chn1 | AL TONO THE MENT OF THE PARTY O | AKOOSOO                          | ANDOOO | TOUR TOUR TOUR TOUR | TO LOCAL TO STATE OF THE PARTY | AV010319 76483       |     |  |
|                     |       |                              | 1  |                                  |        |                     |   | 1                    |     |  |

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metabolism metabolism

cytosof extracellular space

Slc14a1 뎚

| rigure 30-4 | BIOLOGICAL FUNCTION | misc             | cell cycle                        | transport                         | unknown                  | unknown   | nise.          | tutuo for concrete control | Illumin is response (receptor) | unknown  | translation | Tarbjur                   |   |
|-------------|---------------------|------------------|-----------------------------------|-----------------------------------|--------------------------|-----------|----------------|----------------------------|--------------------------------|----------|-------------|---------------------------|---|
|             | LOCALIZATION        | ferritin complex | cytoplasm; histone deacetylase co | endoplasmic reticulum; extracellu |                          | membrane  |                |                            | membrane                       | katanin  | membrane    | integral to membrane      |   |
|             | GENE                | Fth17            | Hdac5                             |                                   | D8Wsu151e                |           |                | Prnd                       | Crry                           |          |             | Slc14a1                   |   |
|             | 1 ocus              | 83457            | 15184                             | 81500                             | 234729                   | 27000     | 00043          | 26434                      | 12946                          | 72425    | 66897       | 108052                    |   |
|             | ACCESS LOCUS GENE   | NM 031261 83457  | NM 010412 15184                   | NM 030749 81500                   | AK11396 234729 DBWsu151e | ARO11330  | AK004341 00043 | NM_023043 26434            | M34173                         | AK010654 |             | INM 028122 108052 SIc14a1 |   |
|             |                     | -                | J.                                |                                   |                          | . '.<br>! |                |                            |                                | -        | J_          |                           | _ |

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Figure 36-5

| 1                   | 1                                | 1                               | 1                                |                 |            | 1                                 | 1                                |                      | 1                   | 1                  | Ì  |
|---------------------|----------------------------------|---------------------------------|----------------------------------|-----------------|------------|-----------------------------------|----------------------------------|----------------------|---------------------|--------------------|--|
| BIOLOGICAL FUNCTION | protein degradation              | transport                       | cell cycle                       | misc            | unknown    | transport                         | metabolism                       | transport            | protein degradation | cell cycle         | signaling  |
| LOCALIZATION        | extracellubr matrix; extracellul | voltage-gated potassium channel | alpha DNA polymerase-:primase co | cytoplasm       |            | Golgi trans face; clathrin vesici | aspartate carbamoyitransferase c | integral to membrane | cymplasmmcleus      | cytoplas manucleus | cytoplasm  |
| GENE                | Timp4                            | Kcnk2                           | Rag2                             | Rabggtb         |            | Ap4s1                             | Cad                              |                      | Prep                |                    | Ncoa1  |
| Locus               | 110595 Timp4                     | 16526                           | 19374                            | 19352           | 67788      | 11782                             | 69719                            | 66868                | 19072               | 66214              | 17977  |
| ACCESS LOCUS GENE   | -≓ NM 080639                     | NM 010607 16526                 | NM_009020 19374                  | NM_011231 19352 | AK011531   | NM_021710 11782                   | AK010453 69719                   | AK004586             | NM_011156 19072     | NM_025427 66214    | 1164606  |
|                     | · ju                             |                                 | U-1                              | 78.3            | <b>9</b> 3 | **                                | W                                |                      | J                   |                    |  |
|                     |                                  | A Principal                     |                                  |                 |            |                                   | ]_                               |                      |                     |                    | The state of the s |

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1gure 36-6

| BIOLOGICAL FUNCTION | transport                        | signaling (GEF) ? | signaling (receptor)  | misc                                  |
|---------------------|----------------------------------|-------------------|-----------------------|---------------------------------------|
| LOCALIZATION        | endoplasmic reticulum;Integral t |                   |                       | ріаѕта тетьтапе                       |
| GENE                | Sec61g                           |                   | Rxrip110              | Bche                                  |
| LOCUS               | 20335                            | 77669             | 20184                 | 12038                                 |
| ACCESS LOCUS (      | NM 011343 20335 Sec61g           | AK020284 77669    | U22015 20184 Rxrip110 | NM_009738 12038 Bche                  |
|                     | -                                | L                 | <u> </u> _            |                                       |
|                     |                                  |                   |                       | لــــــــــــــــــــــــــــــــــــ |
|                     | 1                                | ب                 |                       | -                                     |
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| BIOLOGICAL FUNCTION | translation | tanscription                     | unknown              | unknown              | cell adh                         | meta bolls m                      | ctsk       | signaling                        | mlsc          | unknown   | unknawn  | signaling?                       | meta bolis m                     | traffic          | transport                         | slgnaling     | translation | translation | unknown  | transcription | transport                        | signaling (receptor)            | lipid metabolism | immune response                  | lipid metabolism              | immune response | transcription                | unknown                          | unknown              |
|---------------------|-------------|----------------------------------|----------------------|----------------------|----------------------------------|-----------------------------------|------------|----------------------------------|---------------|-----------|----------|----------------------------------|----------------------------------|------------------|-----------------------------------|---------------|-------------|-------------|----------|---------------|----------------------------------|---------------------------------|------------------|----------------------------------|-------------------------------|-----------------|------------------------------|----------------------------------|----------------------|
| LOCALIZATION        | membrano    | transcription factor TFIID compl | Integral to membrane | Integral to membrane | extracellular space;plasma membr | Integral to membrane; mitochondri |            | adherens junction:cytoskeleton;i | mitochondrion |           |          | Integral to membrane;soluble fra | isocitrate dehydrogenase complex | Golgi trans face | Integral to membrane; mitochondri | extracellular | проѕоте     | nucleofus   |          | nucleoplasm   | integral to membrane;secretory g | extracellular space;integraf to |                  | Integral to membrane;plasma memb | integral to membrane; nucleus | cytoplasm       | transcription factor complex | DNA-directed RNA polymerase II-, | Integral to membrane |
| GENE                | Dnaja2      | Taf11                            | D3Ucla1              |                      | Cdh13                            | Gpam                              | D2Ertd435e | Sdcbp                            |               |           |          | Ptpn1                            | ldh3g                            | Ap3d             | Stc25a19                          | DefB          | Rp110a      | S kiv2l     |          |               | Sypi                             | Tnfrsf19                        | Osbp19           | Tnfsf9                           |                               | MdS             | Yy1                          | D10Wsu52e                        |                      |
| SNOOT               | 56445       | 68776                            | 28146                | 57439                | 12554                            | 14732                             | 51885      | 53378                            | 73078         | 66462     | 66201    | 19246                            | 15929                            | 11776            | 67283                             | 23854         | 19896       | 108077      | 69746    | 67155         | 19027                            | 29820                           | 100273           | 21950                            | 66310                         | 17771           | 22632                        | 28088                            | 76161                |
| ACCESS              | NM_019794   | BC005603                         | NM_030685            | NM 020588            | 707910 MN                        | NM_008149                         | AK016563   | NM_016807                        | AK013995      | NM_025577 | AK004323 | NM_011201                        | NM_008323                        | NM 007460        | AK005710                          | ما            | NM_011287   | NM_021337   | AK010555 | BC004653      | NM_013635                        | ł                               | BC002157         | -                                | 1                             | NM_010841       | ١                            | BC003288                         | A V 040923           |
|                     | -           | ?<br>                            |                      | ŗ.<br>               | 11                               |                                   | :          | ,<br>                            |               | 1         |          |                                  |                                  | 1                |                                   |               |             |             | i        |               | 1.5                              |                                 | 1                |                                  | 7                             |                 | -                            | -                                | THE STREET           |
|                     |             |                                  |                      |                      | \ .<br> -<br> -                  |                                   | 12         | , ( )<br>;                       | gian n        | : 1       |          |                                  |                                  | ·                | i Tr                              | Ų.            | · .         |             |          |               |                                  | and the same of the same of     |                  |                                  |                               |                 |                              | 100                              |                      |

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Log<sub>2</sub>(ratio)

Figure 37 B

| ۱.    |                       |            |        |             | '                                     | rigare 37 D                    |
|-------|-----------------------|------------|--------|-------------|---------------------------------------|--------------------------------|
| 4 µ   | Share to go man .     | ACCESS     | LOCUS  | GENE        | LOCALIZATION                          | BIOLOGICAL FUNCTION            |
| 13.   |                       | AK012535   | 101513 | A1256456    | · · · · · · · · · · · · · · · · · · · | unknown                        |
|       |                       |            | 50493  | Txnrd1      |                                       | transport                      |
|       |                       |            | 19243  | Ptp4a1      | <del></del>                           | signaling                      |
| 1     |                       |            | 14789  | Greb        | <del></del>                           | misc                           |
| 3     |                       | NM_028770  |        | GICD        | <del></del>                           |                                |
| 1     |                       | NM_008984  | 19274  | Ptprm       |                                       | unknown                        |
|       |                       | NM_008135  | 14664  |             |                                       | signaling (receptor)           |
| 1     | ela et libraria       | AK014338   | 74840  | S kc6a9     |                                       | transport                      |
| -     |                       |            | 14417  | Armet       |                                       | turnor related                 |
| H     |                       |            |        | Gad2        | extrachromosomal circular DNA         | meta bolis m                   |
| Ė     | - PELANDARE SELECTION | AK 009402  | 74252  | Arcp        |                                       | unknown                        |
| -     |                       | NM_025748  | 66757  | Deadc1      | mitochondrion                         | mlsc                           |
| -     | Kata Hana Hasas R     | NM_010500  | 15939  | ler5        | cytoplasm                             | Transcription                  |
| 130   |                       | NM_018779  | 54611  | P de3a      | Integral to membrane                  | signaling                      |
| خ     |                       | AK006107   | 74229  |             | Integral to membrane                  | signaling?                     |
| ŀ     |                       | NM_013761  | 27364  | Srr         |                                       | meta bolis m                   |
| Ļ     |                       | NM_010883  | 17986  | Ndph        | extracellular space                   | signaling                      |
| 27    |                       | NM_010234  | 14281  | Fos         | cytoplasm;transcription factor c      | tumor related                  |
| 1     |                       | NM_026612  | 68198  | Ndufb2      | mitochondrion                         | transport                      |
|       |                       | NM_007871  | 13430  | Dnm2        | coated pit                            | ctsk                           |
|       |                       | AF 290542  | 192198 | Lrrc4       | microtubule                           | ctsk                           |
| H     |                       | AK003556   | 66966  | Trit1       | extracellular space; mitochondrio     | transcription?                 |
|       |                       | NM_011328  | 20287  | S ct        | extracellular space                   | signaling (receptor)           |
|       | HONE OF EACH ORDER    | AK017282   | 71373  |             |                                       | unknown                        |
| 200   |                       | AK013872   | 72397  |             |                                       | unknown                        |
|       |                       | AK009325   | 79043  | Tce1        | cytoplasm                             | signating                      |
| 1     |                       | Y12713     | 27282  | E rv4       |                                       | virus                          |
|       |                       | NM_010352  | 14840  | Gsg1        | voltage-gated calcium channel co      | ion channel                    |
| Coppe |                       | NM_026660  | 68294  |             | integral to membrane                  | Transport                      |
| 1     |                       | NM_007930  | 13803  | Enc1        | cytoskeleton                          | ctsk                           |
| 1     | THE PER SECTION       | 翼 AK002767 | 76509  |             |                                       | signaling                      |
|       |                       | AK 006837  | 73447  | Wdr13       | nucleus                               | unknown                        |
|       |                       | AF 030001  |        | a lot       |                                       | misc                           |
|       |                       | NM_025718  | 66705  | Dnase1l2    | extracellular space                   | misc                           |
| 1     |                       | NM_019460  | 54650  | S fmbt1     | chromatin                             | transcription                  |
| į,    |                       | NM_025479  | 66308  |             |                                       | unknown                        |
| i i   |                       | NM_013790  | 27416  | Abcc5       | integral to plasma membrane           | transport                      |
| 1     |                       | NM_026402  | 67841  |             | Inner plaque of spindle pole bod      | unknown                        |
| Ę     |                       | AK003818   | 66248  | Alg5        | endoplasmic reticulum;integral t      | meta bolism                    |
|       |                       | NM_008732  | 18174  | Slc11a2     | endomembrane system; endosome mem     | transport                      |
|       |                       | NM_029417  | 75757  |             |                                       | unknown                        |
|       |                       | NM_011503  | 20911  | Stxbp2      | cytoplasm                             |                                |
| Ī     |                       | 1.1        | 67669  | <del></del> |                                       | unknown                        |
| -     |                       |            | 69435  |             | Inner plaque of spindle pole bod      | ctsk                           |
| ١     |                       | NM_026539  |        | Chd1I       | nucleoplasm                           | cell cycle                     |
| -     |                       | NM_008841  | 18709  | Pik3r2      | phospholnositide 3-kinase comple      | signaling                      |
|       |                       |            | 56273  | Pex14       | integral to membrane; integral to     | misc                           |
| - 1   | Acharda er all        | BC 002302  | 106583 | Rbm16       | 5                                     | cell cycle                     |
| ļ     |                       | NM_025918  |        | D11Ertd707e |                                       | trans port                     |
| į     | 646 644               | AK005862   | 74221  |             |                                       | <del></del>                    |
|       |                       | AK015766   | 75083  |             | 26S proteasome                        | unknown<br>protein degradation |
|       |                       | AK003584   | 81018  | Zfp313      | The production                        |                                |
|       |                       | NM_023372  |        |             | cytosolic large ribosomal subuni      | unknown                        |
|       |                       | AK012848   | 72701  |             | O Jacob In go (10000 And 1000 And     | misc                           |
|       |                       | BC008101   | 68939  |             |                                       | unknown                        |
|       |                       | NM_008376  |        | lmap38      | endoplasmic reticulum;integral t      | signaling                      |
|       |                       | MM_011288  |        | Mrpl23      |                                       | unknown                        |
|       |                       | NM_008488  |        |             | mitochondrial large ribosomal su      | translation                    |
|       |                       | 373        |        | Arhgef1     | autona Balan a marc                   | signaling (GEF)                |
|       |                       | AK006427   | 69440  |             | extracellular space                   | unknown                        |
|       |                       | NM_029814  |        | Toldes      | cytoplasm;nucleus                     | unknown                        |
|       |                       | BC004754   | 21351  | Taldo1      | cytoplasm                             | meta bolis m                   |
|       |                       | AK017628   | 70556  |             | mitochondrial Inner membrane          | trans port                     |
|       |                       | AK010448   | 71968  | 5-1         |                                       | unknown                        |
|       |                       | NM_019402  | 54196  | Pabpn1      | mRNA cleavage stimulating factor      | transcription                  |
|       |                       |            |        |             |                                       |                                |

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| BIOLOGICAL FUNCTION | Transport            | ctsk         | signaling       | 6              | COK                   | mlsc                | 145             |                       | metabolism                       | n/wom/uni      |                | unknown  | transport            |                             | unknown                              | unknown         |                 | UBIIIC           |            |
|---------------------|----------------------|--------------|-----------------|----------------|-----------------------|---------------------|-----------------|-----------------------|----------------------------------|----------------|----------------|----------|----------------------|-----------------------------|--------------------------------------|-----------------|-----------------|------------------|------------|
| LOCALIZATION        | Integral to membrane | cytoskeleton |                 |                | coated pit            | extracellular space |                 | тісгошраю             | endoplasmic reticulum;integral t |                | nacleus        |          | months of the second | integral to plasma memorina | bod elod elbrids of spirale bode bod |                 |                 | cytoplasm        |            |
| GENE                |                      | ,            | FUCI            |                | Drim2                 | 0-222112            | Dilasalız       | Lrrc4                 | A105                             | Silv           | Wdr13          |          |                      | Abcc5                       |                                      |                 |                 | Stxbp2           |            |
| LOCUS               | 70000                | 10700        | 13803           | 76509          | 13430                 | 20101               | 60/00           | 192198                | 07630                            | 00740          | 73447          | 00000    | <b>bb.508</b>        | 27416                       | 27073                                | 10/04           | 75757           | 2001             | 3          |
| ACCESS LOGUS        | ADCOR COSCO MIN      | NINI OZOGOO  | NM_007930 13803 | AK002767 76509 | NIM 007871 13430 Dam2 | INIM COLOR          | UM 025/18 66/05 | AF290542 192198 Lrrc4 | 21,000 11                        | AK003818 66246 | AKON6837 73447 | TOOOOUT. | NM_025479 bb308      | NM 013790 27416             | 200                                  | NM_020402_07041 | NM 029417 75757 | NAM 011502 20011 | NA COLONIA |
|                     |                      |              |                 |                |                       |                     |                 |                       |                                  |                | Who could      |          |                      |                             |                                      |                 |                 |                  |            |

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|             |                     | 1                    |            |                                   |           |                      |          |                                  |             |            |                   |   |
|-------------|---------------------|----------------------|------------|-----------------------------------|-----------|----------------------|----------|----------------------------------|-------------|------------|-------------------|---|
| Figure 3/-2 | BIOLOGICAL FUNCTION | signaling (receptor) | unknown    | transcription?                    | signaling | Transport            | unknown  | lon channel                      |             |            |                   |   |
|             | LOCALIZATION        | extracellular space  |            | extracellular space; mitochondrio | cytoplasm | integral to membrane |          | votrage-gated calcium channel co |             |            |                   |   |
|             | GENE                | Sct                  |            | Trit                              | Tce1      |                      |          | Gso1                             |             |            |                   |   |
|             | rocus               | 20287                | 71373      | 99699                             | 79043     | 68294                | 72397    | 14R40                            | 200         |            |                   |   |
|             | ACCESS LOCUS GENE   | NM 011328 20287      | - AK017282 | AK003556                          | AK009325  | NM 026660 68294      | AK013872 | NM 010352                        | 2000 O ININ | 761        | - 60              |   |
|             |                     | 4                    | ı.<br>Li   | . in                              | AND E     |                      |          |                                  |             | 81-<br>27- | B2                |   |
| Γ           | Tª                  |                      |            |                                   |           |                      |          |                                  |             | ST-        | -SN<br>SNS<br>SNS | 8 |

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| rigure 3/-3 | BIOLOGICAL FUNCTION | umoudui | TINO MILE         | cell cycle | Loin   |                               | cell cycle     | signaling                               |                 | rarsport           | transport                    |               | uworn        | signaling (GEF) |                   | translation                      |
|-------------|---------------------|---------|-------------------|------------|--|-------------------------------|----------------|---|-----------------|--------------------|------------------------------|---------------|--------------|-----------------|-------------------|----------------------------------|
|             | LOCALIZATION        |         |                   |            | of land of other section in the section of the sect | integral to merrica a company | nucleoplasm    | phosphologitide 3-kinase comple         |                 |                    | mitochondria! Inner membrane |               |              |                 |                   | mitochondrial large ribosomal su |
|             | GENE                |         |                   | R bm16     | 1  | Pex14                         | Chd1           | 00.00                                   | FIK312          | D11Ertd707e        |                              |               |              | Action          | Alligain          | Mrp123                           |
|             | TOCUS               |         | 63929             | 106583     |  | 56273                         | 68058          | 00.0                                    | 18/03           | 52715              | 7020                         | 0550/         | 74221        | ,,,,,           | 10801             | 19935                            |
|             | ACCESS LOCUS GENE   | 222011  | . NM 026304 67669 | BC002302   | 100000 B   | NM_019781 56273               | M 026539 68058 | .,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | NM_U08841 18/09 | 28 NM 025918 52715 | 0001000                      | AKUI/020 /020 | THE AKOUSA62 | 00,000          | 10891 BR488 19801 | NM 011288 19935                  |
|             |                     |         |                   |            | 1  |                               |                |   |                 |                    |                              |               |              |                 |                   |                                  |

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|             | 1                   | 1                 |            |             | 1                                 | 1                                |               | 1                    | ١                                |               | 1               | 1                    |           |                     | 1                    |             | 1  |  |
|-------------|---------------------|-------------------|------------|-------------|-----------------------------------|----------------------------------|---------------|----------------------|----------------------------------|---------------|-----------------|----------------------|-----------|---------------------|----------------------|-------------|--|--|
| Figure 37-4 | BIOLOGICAL FUNCTION | misc              | mknown     | the nearest | uanskon                           | signaling (receptor)             | rating and    | CINIDAM              | metabolism                       | to pe la tion |                 | stgnaling?           | signaling | 66.                 | signaling            | motobolism  | iligin manual in the second se |  |
|             | LOCALIZATION        | plasma membrane   |            |             | integral to membrane; secretory 9 | extracellular space; integral to |               | integral to memorane | Isocitrate dehydrogenase complex |               | membrane        | integral to membrane | 11.11     | oxtracellular space | integral to membrane |             |  |  |
|             | GENE                | Greb              |            |             | Sypl                              | Ptorm                            |               |                      | ldh3a                            | Sum           | Dnaja2          |                      |           | NdpN                | Drass                | 2007        | SIT  |  |
|             | rocus               | 14789             | 3          |             | 19027                             | 19274                            | -             | 57439                | 15020                            | 67601         | 56445           | 24220                |           | 17986               | E/811                | 5           | 27364  |  |
| ٠           | ACCESS LOCUS GENE   | WINA 013534 14789 | PECCIO MIN | 01/970-MN   | NM 013635 19027                   | ALCOL ARORA 1927A                | ININI TOPOCOL | NM 020588 57439      | MILE 000000 15000                | NIVI DO0323   | NM 019794 56445 | T012001A             | ALCOOUR.  | NM 010883 17986     | 118 010770 EAE11     | MINI OTOLIS | NM 013761  |  |
|             |                     |                   | · [7]      |             |                                   | ]                                |               |                      |                                  |               |                 |                      |           |                     | ]                    |             |  |  |

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|---------------------|--------------|--|--|--|--|--|--|---|---|--|--|---|--|---|
| BIOLOGICAL FUNCTION | unknown      | metabolism                                       | transport  | unknown  | transcription  | vansport   | unkmown  | Woodyna   | dia com   | misc   | Transcríption  | signaling   | turnor related   |   |
| LOCALIZATION        | membrane     | extrachromosomal circular DNA                    | integral to plasma membrane  |  | nucleus  | cytosol  | DNA-directed RNA polymerase II   | 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1  | megral to mernurane   | mitochondrion  | cytoplasm  | extracellular space   | cytoplasm; transcription factor c  |   |
| GENE                | AI256456     | Gad2   | Slc6a9   | Arcp   | Dr.1   | Tynrd1   | D10Me1152a   | חומונים   |   | Deadc1   | ler5   | NdpN  | Foe  | 3   |
| rocus               | 101513       | 14417  | 14664  | 74252  | 13486  | 50403  | 0000   | 20002   | 76161   | 66757  | 15939  | 17986   | 14201  | 074   |
| ACCESS              |              | MM 008078  | NM 008135  | AK009402   | NM 026106  | NM 015762  | 201010 MM  | 80003288  | AK018222  | NM 025748  |  | NA 010883   | MM 010224  | - C 7010 MM   |
|                     | -            | J.,  | -  | ٠.٠  |  |  | <br>   | e e<br>Ji   |   | 37   | TP<br>   | jii   | . !  | _   |
|                     |              |  |  | ¥<br>1. i  |  |  |  | H.  |   |  |  |   | <u></u>  | -   |
| _                   |              |  | i<br>i   |  | , L<br>  | _J<br>i_   | !  | !   | ١   |  |  | ĺ   | 1  | ~   |
|                     | LOCALIZATION | LOCUS GENE LOCALIZATION 101513 A1256456 membrane | GENE LOCALIZATION AI256456 membrana Gad2 extrachromosomal circular DNA | LOCUS         GENE         LOCALIZATION           101513         AI256456         membrane           14417         Gad2         extractricomosomal circular DNA           14664         Sic6e9         hisagral to plasma membrane | ACCESS LOCUS GENE LOCALIZATION AK012535 101513 AI256456 membrane NM_008078 14417 Gad2 extractricomosornal circular DNA NM_008135 14664 Sic6a9 integral to plasma membrane AK00407 74252 Arcp | GENE LOCALIZATION AI256456 membrane Gad2 extrachromosomal circular DNA Sic6a9 integral to plasma membrane Arcp nucleus | ACCESS LOCUS GENE LOCALIZATION  AK012535 101513 AI256456 membrane  NM_008078 14417 Gad2 extracthromosornal circular DNA  NM_008135 14664 Sic6a9 integral to plasma membrane  AK009402 74252 Arcp nucleus  NM_026106 13486 Dr1 nucleus  NM_026106 13486 Dr1 cytosol | ACCESS LOCUS GENE LOCALIZATION  AK012535 101513 AI256456 membrane  NM_008078 14417 Gad2 extracthromosornal circular DNA  NM_008135 14664 Sic6a9 integral to plasma membrane  AK009402 74252 Arcp nucleus  NM_026106 13486 Dr1 nucleus  NM_015762 50493 Txrrd1 cytosol | ACCESS LOCUS GENE LOCALIZATION AK012535 101513 AI256456 membrane NM_008078 14417 Gad2 extrachromosomal circular DNA NM_008135 14664 Sic6a9 integral to plasma membrane AK009402 74252 Arcp nucleus NM_026106 13486 Dr1 nucleus NM_026106 13486 Dr1 cytosol BC003288 28088 D10Wsu52e DNA-directed RNA polymerase II- | AKOTESS LOCUS GENE LOCALIZATION  AKO12535 101513 AI256456 membrane  NM_008078 14417 Gad2 extrachromosomal circular DNA  NM_008135 14664 S1c6e9 integral to plasma membrane  AK009402 74252 Arcp nucleus  NM_026106 13486 Dr1 nucleus  NM_015762 50493 Txmrd1 cytosol  NM_015762 50493 Txmrd1 cytosol  RC003288 28088 D10Wsu52e DNA-directed RNA polymense II-  AK018222 76161 httegral to membrane | AK012535 LOCUS GENE LOCALIZATION  AK012535 101513 AI256456 membrane  NM_008078 14417 Gad2 extrachromosomal circular DNA  NM_008078 14417 Gad2 extrachromosomal circular DNA  NM_008135 14664 S1c6e9 integral to plasma membrane  AK009402 74252 Arcp nucleus  NM_025106 13486 Dr1 nucleus  NM_015762 50493 Txnrd1 cytosol  BC003288 28088 D10Wsu52e DNA-directed RNA polymerase II-  RAC018222 76161 hregral to membrane  NM_025748 66757 Deadc1 mitochondrion | AK015535 LOCUS GENE LOCALIZATION  AK012535 101513 Al256456 membrane  NM_008078 14417 Gad2 extrachromosomal circular DNA  NM_008078 14417 Gad2 extrachromosomal circular DNA  NM_008135 14664 S1c6e9 integral to plasma membrane  AK009402 74252 Arcp nucleus  NM_025106 13486 Dr1 nucleus  NM_015762 50493 Txnrd1 cytosol  RC003288 28088 D10Wsu52e DNA-directed RNA polymerase II-  RK018222 76161 integral to membrane  NM_025748 66757 Deadc1 mitochondrion  SNM_010500 15939 ler5 cytoplasm | AK012535 LOCUS GENE LOCALIZATION  AK012535 101513 AI256456 membrane  NM_008078 14417 Gad2 extracthomosomal circular DNA  NM_008135 14664 S1669 integral to plasma membrane  AK009402 74252 Arcp nucleus  NM_026106 13486 Dr1 nucleus  NM_015762 50493 Txnrd1 cytosol  RC003288 28088 D10Wsu52e DNA-directed RNA polymerase II-  RK018222 76161 integral to membrane  NM_010500 15939 ler5 cytoplasm  NM_01083 17986 Ndph extracellular space | AK012535 LOCUS GENE LOCALIZATION  AK012535 101513 AL256456 membrane  NM_008078 14417 Gad2 extracthomosomal circular DNA  NM_008078 14417 Gad2 extracthomosomal circular DNA  NM_008135 14664 S1c6e9 integral to plasma membrane  AK009402 74252 Arcp nucleus  NM_015762 50493 Txnrd1 cytosol  NM_015762 50493 Txnrd1 cytosol  NM_015762 76161 hregral to membrane  NM_010500 15939 ler5 cytoplasm  NM_010500 15939 ler5 cytoplasm  NM_010883 17966 Ndph extracellular space  NM_010883 17966 Ndph extracellular space |

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| Figure 37-6 | BIOLOGICAL FUNCTION | cok        | misc          | unknown        | transcription                            | signaling                         | unknown          | signaling?                       |                 |
|-------------|---------------------|------------|---------------|----------------|--|-----------------------------------|------------------|----------------------------------|-----------------|
|             | LOCALIZATION        |            | mitochandrion |                | nucleoplasm                              | adherens (unction;cytos keleton;i |                  | integral to membrane:soluble fra |                 |
|             | GENE                | D2Ertd435e |               |                |  | Sdebn                             | dans             | Dhm1                             | - India         |
|             | rocus               | 51885      | 73078         | 66201          | 27166                                    | 1                                 | - 1              | 70405                            | 19240           |
|             | ACCESS LOCUS GENE   | AK016563 5 | AK013995      | AKO04323 66201 | C2010000                                 | BC004653 07155                    | NAM 025577 66482 | NIM 023311                       | NM_011201 19246 |
|             |                     | , P        |               |                | ֖֖֖֖֖֖֖֖֖֖֖֖֖֖֖֖֖֖֖֖֖֖֖֖֖֖֖֖֖֖֖֖֖֖֖֓֞֞֜֝ |                                   |                  |                                  |                 |

24-288 81-28 81-28 85-72 85-72

| Figure 38 A | BIOLOGICAL FUNCTION | unknown  | transcription | metabolism                      | transcription                | apoptosis               | signaling            | transcription | unknown | unknown  | signaling (receptor) | unknown             | tumor related                   | traffic  | transcription | transport            | unknown     | unknown  | unknown  | misc   | unknown       | protein degradation              | apoptosis                      | translation         | metabolism                       | signaling                   | unknown  |
|-------------|---------------------|----------|---------------|---------------------------------|------------------------------|-------------------------|----------------------|---------------|---------|----------|----------------------|---------------------|---------------------------------|--|---------------|----------------------|-------------|--|----------|--|---------------|----------------------------------|--------------------------------|---------------------|----------------------------------|-----------------------------|--|
|             | LOCALIZATION        |          | extracellular | cytopiasmextracellular space;ma | transcription factor complex | 265 protessome; nucleus | integral to membrane | nucleus       |         |          | Integral to membrane | extracellular space | endoplasmic reticulumextracellu | Integral to membrane; mitochondri  | nucleus       | integral to membrane |             |  |          | integral to membrane   |               | basement membrana; extracellular | cytosol;mitochondrial membrane | extracellular space | extracellular space;mitochondrlo | integral to plasma membrane | integral to membrane   |
|             | GENE                |          | Gig1          | Moxd1                           | Sox5                         | Faff                    | Calcyon              | R npc2        |         |          | Mc2r                 |                     | Upk2                            | Tomm40   | Hkr3          | Sic14a1              | D28wg0891e  |  |          | Ggcx   |               | Tinag                            | S h3glb1                       | Stch                | Oxet                             | Mpp3                        | Zdhhc4   |
|             | SUCOL               | 75645    | 170753        | 59012                           | 20678                        | 14084                   | 68566                | 170791        |         | 76566    | 17200                | 60315               | 22269                           | 53333  | 100090        | 108052               | 52840       | 75620  | 70373    | 56316  | 70594         | 26944                            | 54673                          | 110920              | 67041                            | 13384                       | 72881  |
|             | ACCESS              | AK005864 | AF292939      | NM_021509                       | NM 011444 2                  | NM_007983               | AK 003400            | BC004000      | L17305  | AK005164 | NM_008560 17200      | NM_021713           | NM_009476                       | NM 016871  | BC005515      | NM 028122            | XX AK003735 | AK013135   | AK006185 | NM_019802  | AK017676      | NM_012033                        |                                | AK021006            | AK011354                         | ł                           | AK013609   |
|             |                     |          |               |                                 |                              |                         |                      |               |         |          | _                    |                     | THE REAL PROPERTY.              |  |               |                      |             |  | 1        |  | in the second |                                  |                                | FT                  | 4                                | The state of                |  |
|             |                     | -        | 1             |                                 |                              |                         |                      |               |         |          |                      |                     |                                 | T TOTAL TOTA |               |                      |             | The state of the s |          | The same of the sa |               |                                  |                                |                     |                                  | 4                           | The state of the s |

Colon-72 Colon-792 Breast-78 Breast-72 Breast-792 Lung-78 Lung-78





Figure 38 B

|  | ACCESS  | Locus   | GENE  | LOCALIZATION   | BIOLOGICAL FUNCTION   |
|--|---|---|---|--|---|
| 10.2000 10.0000 10.000 10.000 10.000 10.000 10.000 10.000 10.000 10.000 10.0000 | NM_015806   | 50772   | Mapk6   | nucleosome   | signaling   |
|  | AK003826  | 68530   | <del></del>   |  | unknown   |
| THE REPORT OF THE PARTY OF THE  | NM_025865   | 66952   |   | ······································   | unknown   |
|  | NM_010590   | 16475   | Jub   |  |   |
|  |   |   | 340   | <del></del>  | signating ?   |
|  | AK012109  | 72194   |   |  | unknown   |
|  | NM_009717   | 11922   | Neurod6   | nucleus  | transcription   |
| 一种 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1   | AK019863  | 77634   |   |  | translation   |
|  | NM_023805   | 76257   | Slc38a3   | integral to plasma membrana  | transport   |
| The state of the s | NM_025978   | 67120   |   | cytoplesm .  | unknown   |
|  | AK010452  | 52666   | D10Ertd610e   | plasma membrane  | tumor related   |
|  | NM_009046   | 19698   | Reib  | transcription factor complex   |   |
|  |   |   |   | <del></del>  | trans cription  |
|  | NM_008405   | 16415   | Itgb2l  | extracellular matrix; extracellul  | cell adh  |
| 450  | BC 003237   | 98985   | A1462438  | nucleus  | trans cription  |
|  | NM_030717   | 80907   | Lactb   | extracellular space; integral to   | mis c   |
|  | AK014763  | 76769   |   | Integral to membrana   | Unknown   |
|  | MM_026095   | 67332   | S nrpd3   | ribonucleoprotein complex;viral  | mise  |
|  | NM_018802   | 55925   | S yt8   | Integral to membrane;synaptic va   | trans port  |
|  | AK016162  |   |   |  | unknown   |
|  | NM_013647   | 20055   | R ps16  | cytosofic ribosome (sensu Eukary   |   |
|  | NM_009092   |   | Rps17   |  | translation   |
|  | **  | 20068   |   | cytos olic small ribosomal subuni  | trans lation  |
|  | NM_011197   | 19221   | Ptgfrn  | extracellular space; integral to   | translation (receptor)  |
| THE PARTY OF THE P | AK014338  | 74840   | Armet   | extracellular space  | tumorrelated  |
|  | NM_025460   | 66271   |   | integral to membrane   | unknown   |
|  | AK013604  | 72880   |   |  | unknown   |
|  | MM_025563   | 66439   |   |  | protein degradation?  |
|  | NM_009035   | 19664   | Ribpsuth  | cytoplasm; nucleus   | Immune response   |
|  | BC002193  | 110279  | Bcr   |  | unknown   |
|  | AK018585  | 74558   |   |  |   |
|  | MM_011012   |   | Opri  | integral to plasma membrane  | unknown   |
|  |   |   | Орп   |  | signaling (receptor)  |
|  | AK003809  | 76308   |   | Golgi apparatus; endoplasmic reti  | signaling   |
|  | NM_026908   |   |   |  | unknown   |
|  | M AK020613  | 78672   |   | integral to membrane   | misc  |
|  | (67.3)  |   |   |  |   |
|  | AK005063  | 110351  | Rap1ga1   |  | signaling   |
|  | A COL   |   | Rap1ga1<br>Tntrst25   | extracellular space; integral to   |   |
|  | AK005063<br>NM_033042   | 85030   | Tnfrsf25  |  | signaling (receptor)  |
|  | AK005063<br>NM_033042<br>NM_01739   | 85030<br>53896  | Tnfrsf25<br>S lc7a10  | integral to plasma membrane  | signaling (receptor)<br>transport   |
|  | AK005063<br>NM_033042<br>NM_01739<br>NM_01179   | 85030<br>53896<br>3 23825   | Tnfrsf25<br>Sic7a10<br>Banf1  | integral to plasma membrane<br>Integral to membrane;nucleus  | algnaling (receptor)<br>transport<br>misc   |
|  | AK005063<br>NM_033042<br>NM_017394<br>NM_01179<br>NM_02154  | 85030<br>53896<br>3 23825<br>3 18530  | Tnfrsf25<br>S1c7a10<br>Banf1<br>Pcdh8   | integral to plasma membrane  | aigna ling (receptor)<br>trans port<br>misc<br>cell adh   |
|  | AK005063<br>NM_033042<br>NM_01739<br>NM_01179<br>NM_02154<br>AK007415   | 2 85030<br>4 53896<br>3 23825<br>3 18530<br>69046   | Tnftsf25<br>Sic7a10<br>Banf1<br>PcdhB<br>Hbld2  | Integral to plasma membrane<br>Integral to membrane;nucleus<br>Integral to plasma membrane   | signa ling (receptor)<br>transport<br>misc<br>cell adh<br>unknown   |
|  | AK005063<br>NM_03304;<br>NM_01739;<br>NM_01179;<br>NM_02154;<br>AK007415;<br>NM_02652   | 2 85030<br>4 53896<br>3 23825<br>3 18530<br>69046<br>3 68039  | Tnftsf25<br>Sic7a10<br>Banf1<br>PedhB<br>Hbid2<br>Nmb   | integral to plasma membrane<br>Integral to membrane;nucleus  | signa ling (receptor) trans port misc cell adh unknown signa ling (secreted)  |
|  | AK005063<br>NM_033042<br>NM_017394<br>NM_01179<br>NM_02154<br>AK007415<br>NM_02652<br>NM_00831  | 2 85030<br>4 53896<br>3 23825<br>3 18530<br>69046<br>3 68039<br>7 15586   | T nitsf25<br>S ic7a10<br>Banf1<br>P cdhB<br>H bld2<br>Nmb<br>Hyat1  | Integral to plasma membrane<br>Integral to membrane;nucleus<br>Integral to plasma membrane<br>extracellular space  | signa ling (receptor) transport misc cell adh unknown signa ling (secreted) meta bolism   |
|  | AK005063<br>NM_033042<br>NM_017394<br>NM_01179<br>NM_02154<br>AK007415<br>NM_02652<br>NM_00831<br>NM_02143  | 2 85030<br>4 53896<br>3 23825<br>3 18530<br>69046<br>3 68039<br>7 15586<br>3 58244  | T ntrsf25<br>S ic7a10<br>Banf1<br>PcdhB<br>Hbid2<br>Nmb<br>Hyai1<br>S tx6   | Integral to plasma membrane<br>Integral to membrane;nucleus<br>Integral to plasma membrane   | signa ling (receptor) trans port misc cell adh unknown signa ling (secreted)  |
|  | AK005063<br>NM_033042<br>NM_01739<br>NM_01179<br>NM_02154<br>AK007415<br>MM_02652<br>NM_02652<br>NM_02831<br>NM_02143<br>NM_01006   | 2 85030<br>4 53896<br>3 23825<br>3 18530<br>69046<br>3 68039<br>7 15586<br>3 58244<br>4 13427   | T nitsf25<br>S ic7a10<br>Banf1<br>P cdhB<br>H bld2<br>Nmb<br>Hyat1  | Integral to plasma membrane<br>Integral to membrane;nucleus<br>Integral to plasma membrane<br>extracellular space  | signa ling (receptor) transport misc cell adh unknown signa ling (secreted) meta bolism   |
|  | AK005063<br>NM_033042<br>NM_017394<br>NM_01179<br>NM_02154<br>AK007415<br>NM_02652<br>NM_00831<br>NM_02143  | 2 85030<br>4 53896<br>3 23825<br>3 18530<br>69046<br>3 68039<br>7 15586<br>3 58244<br>4 13427   | T ntrsf25<br>S ic7a10<br>Banf1<br>PcdhB<br>Hbid2<br>Nmb<br>Hyai1<br>S tx6   | Integral to plasma membrane Integral to membrane;nucleus Integral to plasma membrane extracellular space  Golgi apparatus;endosome;integra   | algnaling (receptor) transport misc cell adh unknown signaling (secreted) metabolism traffic  |
|  | AK005063 NM_033042 NM_01739 NM_01179 NM_02154 AK007415 NM_02652 NM_02652 NM_02143 NM_01006 NM_02608   | 2 85030<br>4 53896<br>3 23825<br>3 18530<br>69046<br>3 68039<br>7 15586<br>3 58244<br>4 13427   | T ntrsf25<br>S ic7a10<br>Banf1<br>PcdhB<br>Hbid2<br>Nmb<br>Hyal1<br>S tx6<br>Dnclc2   | Integral to plasma membrane Integral to membrane;nucleus Integral to plasma membrane extracellular space  Golgi apparatus;endosome;integra   | algnaling (receptor) transport misc cell adh unknown signaling (secreted) metabolism traffic ctsk   |
|  | AK005063 NM_033042 NM_01739 NM_01779 NM_02154 AK007415 AK007415 NM_02652 NM_02652 NM_02143 NM_01006 NM_02608 AK010262   | 2 85030<br>4 53896<br>3 23825<br>3 18530<br>69046<br>3 68039<br>7 15586<br>3 58244<br>4 13427<br>2 67299  | T ntrsf25 Sic7a10 Banf1 PedhB Hbid2 Nmb Hyal1 Stx6 Dncic2 Dock7   | Integral to plasma membrane Integral to membrane;nucleus Integral to plasma membrane extracellular space  Golgi apparatus;endosome;integra   | aignaling (receptor) transport misc cell adh unknown signaling (secreted) metabolism treffic ctsk cell cycle?   |
|  | AK005063<br>NM_033042<br>NM_01739<br>NM_01739<br>NM_021543<br>MM_02652<br>NM_02652<br>NM_02143<br>NM_01006<br>NM_02608<br>NM_02608<br>AK010262<br>AK010262  | 2 85030<br>4 53896<br>3 23825<br>3 18530<br>69046<br>3 68039<br>7 15586<br>3 58244<br>4 13427<br>2 67299<br>71955<br>72003  | T ntrsf25 Sic7a10 Banf1 PcdhB Hbld2 Nmb Hyal1 Stx6 Dnclc2 Dock7   | Integral to plasma membrane Integral to membrane;nucleus Integral to plasma membrane extracellular space  Golgi apparatus;endosome;integra cytoplasmic dynein complex  extracellular space; integral to  | signaling (receptor) transport misc cell adh unknown signaling (secreted) matabolism traffic ctsk cell cycle ? unknown transport  |
|  | AK005063<br>NM_03304/<br>NM_01739<br>NM_01759<br>NM_02154<br>MM_02154<br>MM_02652<br>NM_02652<br>NM_02143<br>NM_01006<br>NM_01006<br>NM_02608<br>AK010262<br>AK010262<br>AK005132   | 2 85030<br>4 53896<br>3 23825<br>3 18530<br>69046<br>3 68039<br>7 15586<br>3 58244<br>4 13427<br>2 67299<br>71955<br>72003<br>27883   | Tintsf25 Sic7a10 Banfl PedhB Hbld2 Nmb Hyal1 Stx6 Dinclc2 Dock7 Synpr D16H22S680E   | Integral to plasma membrane Integral to membrane;nucleus Integral to plasma membrane extracellular space  Golgl apparatus;endosome;integra cytoplasmic dynein complex  extracellular space;integral to chromatin   | algnaling (receptor) trans port misc cell adh unknown signaling (secreted) metabolism treffic ctsk cell cycle ? Unknown transport unknown   |
|  | AK005063 NM_033047 NM_017399 NM_011739 NM_02154 AK007415 NM_02652 NM_00831 NM_02662 NM_01006 NM_02662 AK010262 AK010262 AK005132 X74504   | 2 85030<br>4 53896<br>3 23825<br>3 18530<br>69046<br>3 68039<br>7 15586<br>3 58244<br>4 13427<br>2 67299<br>71955<br>72003<br>27883<br>76467  | T ntrsf25 Sic7a10 Banf1 PedhB Hbid2 Nmb Hyal1 Stx6 Dnclc2 Dock7 Synpr D16H22S680E Mrsb  | Integral to plasma membrane Integral to membrane; nucleus Integral to plasma membrane extracellular space  Golgl apparatus; endosome; integra cytoplasmic dynein complex  extracellular space; integral to chromatin extracellular space   | algnaling (receptor) transport misc cell adh unknown signaling (secreted) metabolism traffic ctsk cell cycle ? unknown transport unknown misc   |
|  | AK005063 NM_033047 NM_017399 NM_011799 NM_02154 AK007415 NM_02652 NM_00831 NM_02143 NM_01006 NM_02608 AK010263 AK0105132 X74504 NM_01678  | 2 85030<br>4 53896<br>3 23825<br>3 18530<br>69046<br>3 68039<br>7 15586<br>3 58244<br>4 13427<br>2 67299<br>71955<br>72003<br>27883<br>76467<br>9 53324   | Tnitsf25 Sic7a10 Banf1 PcdhB Hbid2 Nmb Hyai1 Stx6 Dnclc2 Dock7  Synpr D16H22S680E Mrsb Nptx2  | Integral to plasma membrane Integral to membrane; nucleus Integral to membrane; nucleus Integral to plasma membrane extracellular space  Golgl apparatus; endosome; integra cytoplasmic dynein complex  extracellular space; integral to chromatin extracellular space extracellular space   | algnaling (receptor) transport misc cell adh unknown signaling (secreted) metabolism traffic ctsk cell cycle ? unknown transport unknown misc Transport   |
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|  | AK005063 NM_03304; NM_01739; NM_01739; NM_01759; NM_02154; AK007415 MM_02652; NM_00831 NM_01006 NM_02608; AK010262; AK005132 X74504 AK009912 NM_01167; NM_01167; NM_01152 BC003457  | 2 85030<br>4 53896<br>3 23825<br>3 18530<br>69046<br>3 68039<br>7 15586<br>3 58244<br>4 13427<br>2 67299<br>71955<br>72003<br>27883<br>76467<br>9 22223<br>9 21353<br>108645  | T ntrsf25 Sic7a10 Banfl PcdhB Hbld2 Nmb Hyal1 Stx6 Dnclc2 Dock7 Synpr D16H22S680E Mrsb Nptx2 Uchl1 Tank   | Integral to plasma membrane Integral to membrane;nucleus Integral to plasma membrane extracellular space  Golgi apparatus;endosome;integra cytoplasmic dynein complex  extracellular space;integral to chromatin extracellular space extracellular space extracellular space;integral to cytoplasm cytoplasm extracellular space;integral to   | algnaling (receptor) transport misc cell adh unknown signaling (secreted) meta bolism traffic ctsk cell cycle ? unknown transport unknown misc Transport protein degradation  |
|  | AK005063 NM_033047 NM_017399 NM_017399 NM_02154 AK007415 NM_02652 NM_00831 NM_02143 NM_01006 NM_01006 AK010262 AK005132 X74504 AK009912 NM_011678 NM_011678 NM_011678 NM_011678 NM_01168  | 2 85030<br>4 53896<br>3 23825<br>3 18530<br>69046<br>3 68039<br>7 15586<br>3 58244<br>4 13427<br>2 67299<br>71955<br>72003<br>27883<br>76467<br>9 53324<br>0 22223<br>108645<br>3 93739   | T nitsf25 Sic7a10 Banfl PcdhB Hbld2 Nmb Hyal1 Stx6 Dnclc2 Dock7 Synpr D16H22S680E Mrsb Nptx2 Uchl1 Tank   | Integral to plasma membrane Integral to membrane;nucleus Integral to plasma membrane extracellular space  Golgi apparatus;endosome;integra cytoplasmic dynein complex  extracellular space;integral to chromatin extracellular space extracellular space cytoplasm cytoplasm   | algnaling (receptor) transport misc cell adh unknown signaling (secreted) meta bolism treffic ctsk cell cycle ? unknown transport unknown misc Transport protein degradation signaling  |
|  | AK005063 NM_03304; NM_01739; NM_01739; NM_01759; NM_02154; AK007415 MM_02652; NM_00831 NM_01006 NM_02608; AK010262; AK005132 X74504 AK009912 NM_01167; NM_01167; NM_01152 BC003457  | 2 85030<br>4 53896<br>3 23825<br>3 18530<br>69046<br>3 68039<br>7 15586<br>3 58244<br>4 13427<br>2 67299<br>71955<br>72003<br>27883<br>76467<br>9 53324<br>0 22223<br>108645<br>3 93739   | T ntrsf25 Sic7a10 Banfl PcdhB Hbld2 Nmb Hyal1 Stx6 Dnclc2 Dock7 Synpr D16H22S680E Mrsb Nptx2 Uchl1 Tank   | Integral to plasma membrane Integral to membrane;nucleus Integral to plasma membrane extracellular space  Golgi apparatus;endosome;integra cytoplasmic dynein complex  extracellular space;integral to chromatin extracellular space extracellular space extracellular space;integral to cytoplasm cytoplasm extracellular space;integral to   | algnaling (receptor) trans port misc cell adh unknown signaling (secreted) metabolism treffic ctsk cell cycle? unknown transport unknown misc Transport protein degradation signaling misc  |
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|  | AK005063 NM_033047 NM_01739 NM_01739 NM_02154 AK007415 NM_02652 NM_00831 NM_02163 NM_01066 NM_02665 AK005132 X74504 AK005132 X74504 AK009912 NM_01678 NM_01152 NM_01678 NM_01152 AK005132 X74504 AK005132 X74504 AK005132 X74504 AK005132 X74504 AK005132 X74504 AK005132 AK005132 X74504 AK005132 X74504 AK005132 X74504 AK005132 X74504 AK005132 X74504 AK005132 X74504 AK005132 X74504 AK005132 X74504 AK005132 X74504 AK005132 X74504 AK005132 X74504 AK005132 X74504 AK005132 X74504 AK005132 X74504 AK005132 X74504 AK005132 X74504 AK005132 X74504 AK005132 X74504 AK005132 X74504 AK005063 | 2 85030<br>4 53896<br>3 23825<br>3 18530<br>69046<br>3 68039<br>7 15586<br>3 58244<br>4 13427<br>2 67299<br>71955<br>72003<br>27883<br>76467<br>9 53324<br>0 22223<br>9 21353<br>108645<br>3 93739<br>8 12632<br>4 27225<br>28 20614<br>20591<br>104884<br>35 69048<br>42 18196<br>2 234956   | T ntrsf25 Sic7a10 Banf1 PedhB Hbdd2 Nmb Hyal1 Stx6 Dnele2 Dock7 Synpr D16H22S680E Mrsb Nptx2 Uchl1 Tank Gabarapf2 Cff2 Ddx24 Snap25 Smex Sic30a5 Nsg1 G Crsp6 | Integral to plasma membrane Integral to membrane; nucleus Integral to membrane; nucleus Integral to plasma membrane  extracellular space  Golgi apparatus; endos ome; integra cytoplasmic dynein complex  extracellular space; integral to chromatin extracellular space; integral to cytoplasm cytoplasm extracellular space; integral to cytoplasm extracellular space; integral to cytoplasm extracellular space; integral to cytoplasm extracellular space; integral to cytoplasm extracellular space; integral to cytoplasm extracellular space; integral to cytoplasm plasma membrane plasma membrane mitochondrion; nucleus Golgi epparatus; apical plasma me   | algnaling (receptor) transport misc cell adh unknown signaling (secreted) metabolism traffic ctsk cell cycle ? unknown transport unknown mise Transport protein degradation signaling ctsk cell cycle ? signaling ctsk cell cycle ? signaling transport signaling transport signaling transport signaling transport signaling ctsk cell cycle signaling trans cription signaling trans cription |
|  | AK005063 NM_03304i NM_03304i NM_01739i NM_01739i NM_02154i AK007415 NM_02652i NM_00831 NM_01066i NM_02668i AK010262i AK005132 AK005132 AK005132 NM_011678i NM_011678i NM_011678i NM_011678i NM_01144i AK127245i NM_02046i NM_02046i NM_02046i NM_01144i AK127245i NM_02046i NM_0144i AK127245i NM_02046i NM_0144i AK127245i NM_02046i AK013427 NM_02046i AK013427   | 2 85030<br>4 53896<br>3 23825<br>3 18530<br>69046<br>3 68039<br>7 15586<br>3 58244<br>4 13427<br>2 67299<br>71955<br>71955<br>27883<br>76467<br>9 53324<br>0 22223<br>19 21353<br>3 93739<br>18 12632<br>14 27225<br>18 20614<br>20591<br>104884<br>35 69048<br>46 218196<br>2 234956   | T ntrsf25 Sic7a10 Banf1 PedhB Hbdd2 Nmb Hyal1 Stx6 Dnele2 Dock7 Synpr D16H22S680E Mrsb Nptx2 Uchl1 Tank Gabarapf2 Cff2 Ddx24 Snap25 Smex Sic30a5 Nsg1 G Crsp6 | Integral to plasma membrane Integral to membrane; nucleus Integral to membrane; nucleus Integral to plasma membrane  extracellular space  Golgi apparatus; endos ome; integra cytoplasmic dynein complex  extracellular space; integral to chromatin extracellular space; integral to cytoplasm cytoplasm extracellular space; integral to cytoplasm extracellular space; integral to cytoplasm extracellular space; integral to cytoplasm extracellular space; integral to cytoplasm extracellular space; integral to cytoplasm extracellular space; integral to cytoplasm plasma membrane plasma membrane mitochondrion; nucleus Golgi epparatus; apical plasma me   | algnaling (receptor) transport misc cell adh unknown signaling (secreted) metabolism traffic ctsk cell cycle ? unknown transport unknown misc Transport protein degradation signaling ctsk cell cycle signaling traffic transport protein degradation signaling ctsk cell cycle signaling transcription signaling transcription signaling transport   |
|  | AK005063 NM_033047 NM_01739 NM_01739 NM_02154 AK007415 NM_02652 NM_00831 NM_02163 NM_01066 NM_02665 AK005132 X74504 AK005132 X74504 AK009912 NM_01678 NM_01152 NM_01678 NM_01152 AK005132 X74504 AK005132 X74504 AK005132 X74504 AK005132 X74504 AK005132 X74504 AK005132 AK005132 X74504 AK005132 X74504 AK005132 X74504 AK005132 X74504 AK005132 X74504 AK005132 X74504 AK005132 X74504 AK005132 X74504 AK005132 X74504 AK005132 X74504 AK005132 X74504 AK005132 X74504 AK005132 X74504 AK005132 X74504 AK005132 X74504 AK005132 X74504 AK005132 X74504 AK005132 X74504 AK005132 X74504 AK005063 | 2 85030<br>4 53896<br>3 23825<br>3 18530<br>69046<br>3 68039<br>7 15586<br>3 58244<br>4 13427<br>2 67299<br>71955<br>71955<br>27883<br>76467<br>9 53324<br>0 22223<br>19 21353<br>3 93739<br>18 12632<br>14 27225<br>18 20614<br>20591<br>104884<br>35 69048<br>46 218196<br>2 234956   | T ntrsf25 Sic7a10 Banf1 PedhB Hbdd2 Nmb Hyal1 Stx6 Dnele2 Dock7 Synpr D16H22S680E Mrsb Nptx2 Uchl1 Tank Gabarapf2 Cff2 Ddx24 Snap25 Smex Sic30a5 Nsg1 G Crsp6 | Integral to plasma membrane Integral to membrane; nucleus Integral to membrane; nucleus Integral to plasma membrane  extracellular space  Golgi apparatus; endos ome; integra cytoplasmic dynein complex  extracellular space; integral to chromatin extracellular space; integral to cytoplasm cytoplasm extracellular space; integral to cytoplasm extracellular space; integral to cytoplasm extracellular space; integral to cytoplasm extracellular space; integral to cytoplasm extracellular space; integral to cytoplasm extracellular space; integral to cytoplasm plasma membrane plasma membrane mitochondrion; nucleus Golgi epparatus; apical plasma me   | algnaling (receptor) transport misc cell adh unknown signaling (secreted) metabolism traffic ctsk cell cycle ? unknown transport unknown misc Transport protein degradation signaling misc signaling ctsk cell cycle signaling transcription transport signaling transcription transcription  |
|  | AK005063 NM_03304i NM_03304i NM_01739i NM_01739i NM_02154i AK007415 NM_02652i NM_00831 NM_01066i NM_02668i AK010262i AK005132 AK005132 AK005132 NM_011678i NM_011678i NM_011678i NM_011678i NM_01144i AK127245i NM_02046i NM_02046i NM_02046i NM_01144i AK127245i NM_02046i NM_0144i AK127245i NM_02046i NM_0144i AK127245i NM_02046i AK013427 NM_02046i AK013427   | 2 85030<br>4 53896<br>3 23825<br>3 18530<br>69046<br>3 68039<br>7 15586<br>3 58244<br>4 13427<br>2 67299<br>71955<br>72003<br>27883<br>76467<br>9 21353<br>108645<br>3 93739<br>8 12632<br>104884<br>20591<br>104884<br>20591<br>104884<br>218196<br>2234956<br>2234956<br>2234956<br>2234956<br>2234956  | T ntrsf25 Sic7a10 Banf1 PedhB Hbdd2 Nmb Hyal1 Stx6 Dnele2 Dock7 Synpr D16H22S680E Mrsb Nptx2 Uchl1 Tank Gabarapf2 Cff2 Ddx24 Snap25 Smex Sic30a5 Nsg1 G Crsp6 | Integral to plasma membrane Integral to membrane;nucleus Integral to plasma membrane extracellular space  Golgi apparatus;endosome;integra cytoplasmic dyneln complex  extracellular space;integral to chromatin extracellular space extracellular space extracellular space;integral to cytoplasm cytoplasm extracellular space;integral to cytoplasm extracellular space;integral to cytoplasm extracellular space;integral to cytoplasm extracellular space;integral to cytoplasm extracellular space;integral to cytoskeleton;nucleus cytoplasm plasma membrane mitochondrion;rucleus  Golgi apparatus;apical plasma me Golgi apparatus;integral to memb   | algnaling (receptor)  transport misc cell adh unknown signaling (secreted) metabolism traffic ctsk cell cycle ? unknown transport unknown misc Transport protein degradation algnaling misc signaling ctsk cell cycle signaling transcription signaling transport signaling transcription unknown   |

Colon-18 Colon-72 Colon-192 Breast-18 Breast-72 Breast-192 Lung-18

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| rigure 39 A | BIOLOGICAL FUNCTION | ion channel                     | ransport, metabolism              | unknown | unknown              | lipid metabolism                  | misc                             | cell cycle                      | unknown  | transcription | signaling                        | transcription                | misc      | transport                        | metabolism          | unknown                        | signaling  | translation                           | raffic           | transcription                | unknown  | transcription        | metabolism                        | transcription | Immune response | transport                  | tumor related ? | transcription                |
|-------------|---------------------|---------------------------------|-----------------------------------|---------|----------------------|-----------------------------------|----------------------------------|---------------------------------|----------|---------------|----------------------------------|------------------------------|-----------|----------------------------------|---------------------|--------------------------------|------------|---------------------------------------|------------------|------------------------------|----------|----------------------|-----------------------------------|---------------|-----------------|----------------------------|-----------------|------------------------------|
|             | LOCALIZATION        | voltage-gated potassium channel | integral to membrane; mitochondri |         | integral to membrane | extracellular space; glycerol-3-p | cAMP-dependent protein kinase co | extracellular space;integral to |          | nucleus       | protein serine-threonine phospha | transcription factor complex |           | Golgi trans face;clathrin vesici | extracellular space | endoplasmic reticulum membrane | cytoplas m | extracellular space                   | synaptic vesicle | transcription factor complex |          | integral to membrane | Integral to membrane; mitochondri | проѕоте       |                 | imegral to plasma membrane |                 | transcription factor complex |
|             | GENE                | Curm3                           | Cyba                              |         |                      | Gpd2                              | Prkar1a                          | Btc                             |          | Zfp198        | Ppm1d                            | Snail                        | Dnaja1    | Ap1s1                            |                     | UbqIn2                         | Tce1       | Stch                                  | Syn3             | Hivep1                       | Arrdc2   |                      | Ndufa3                            |               |                 | Rhcg                       | Scml2           | Lyll                         |
|             | rocus               | 94218                           | 13057                             | 69216   | 74770                | 14571                             | 19084                            | 12223                           | 73242    | 76007         | 53892                            | 20613                        | 15502     | 11769                            | 67763               | 54609                          | 79043      | 110920                                | 27204            | 110521                       | 70807    | 75273                | 66091                             | 66410         | 75608           | 56315                      | 107815          | 17095                        |
|             | ACCESS LOGUS        | NM 053186                       | AK 021200                         |         |                      |                                   | AK019147                         | l۵                              | AK002569 | AK017929      | 016910 MN                        |                              | NM 008298 | NM 007457                        |                     |                                | AK009325   | AK 02 1006                            | NM 013722 27204  | NM 007772                    | AK014582 | BCD16444             | AK 006243                         | -             | 1               | NM 019799                  | 1               | NM_008535                    |
|             |                     | -                               |                                   |         |                      | -                                 | -                                |                                 | i i      | İ             |                                  | -                            |           |                                  |                     |                                | j.         | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 |                  |                              |          |                      |                                   |               |                 |                            | -               | 100                          |
|             |                     |                                 |                                   |         |                      |                                   |                                  |                                 |          |               | 一下 一                             |                              |           |                                  |                     |                                |            |                                       |                  |                              |          |                      |                                   |               |                 | . '                        |                 |                              |

Colon-18 Colon-192 Breast-18 Breast-72 Breast-72 Lung-72 Lung-72





Figure 39 B

|                        | ACCESS   | LOCUS   | GENE  | LOCALIZATION  | BIOLOGICAL FUNCTION  |
|------------------------|--|---|---|---|--|
| <b>三、北京国际发展企业</b>      | Y15910   | 54004   | Dlap2   | ···   | misc   |
|                        | NM_009974  | 13000   | Csnk2a2   | protein kinase CK2 complex  | signaling  |
|                        | NM_021888  | 60507   | Qtrt1   |   | mise   |
| <b>国产基</b> 对 ( )       | NM_011025  | 18429   | Oxt   | extrace!lular space   | signaling (secreted)   |
|                        | NM_018804  | 229521  | Syt11   | integral to plasma membrane;syna  | trans port   |
|                        | NM_D11040  | 18510   | Pax8  | transcription factor complex  | transcription  |
|                        | NM_019477  | 50790   | Faci4   | cytoplasm;integral to membrane  | meta bolis m   |
|                        | NM_016802  | 11848   | Arha  | cytoskeletor; cytos ol  | signaling  |
|                        | AK016037   | 75212   | Rnf121  |   | protein degradation?   |
|                        | NM_011341  | 20318   | Sdf4  | Golgi apparatus; extracellular sp   | misc   |
|                        | NM_007527  | 12028   | Bax   | integral to membrane; initochondri  | a poptos is  |
|                        | NM_009788  | 12307   | Calb1   | cytoplasm   | misc   |
|                        | NW_008098  | 14489   | Mtpn  |   | transcription  |
|                        | AKD05756   | 75454   |   |   | meta bolis m   |
|                        | AF 232828  | 18134   | Nova 1  | nucleus   | transcription  |
|                        | NM_016666  | 11632   | Aip   | cytoplasm   | transcription  |
|                        | BC017625   | 68047   |   |   | unknown  |
|                        | AKD16299   | 75894   |   |   | misc   |
|                        | AK010890   | 72308   | Brf1  |   | transcription  |
|                        | AK011747   | 17237   | Mgrn1   | extracellular   | abobiosis  |
|                        | NM_010826  |   | Mrvi1   | endoplasmic reticulum membrane;i  | trans port   |
|                        | AF 217484  | 57444   | lsg20   | Intracellular   | misc   |
|                        | AK019863   | 77634   |   |   | translation  |
|                        | AK005862   | 74221   | M . 2   |   | unknown  |
|                        | NM_010771  | 17184   | Matr3   | nucleus   | misc   |
|                        | NM_025299<br>NM_018819   |   | TxnI4   | snRNP U5  | tre ns cription  |
| ELLE SERVICE LEVEL PRO | NM_018802  |   | Brp44l  | late and to make a second   | unknown  |
|                        | AK011126   | 268490  | Syt8  | Integral to membrane;synaptic ve  | transport  |
|                        | NM_008292  |   | Hsd17b4   |   | unknown  |
|                        | AK002696   | 28126   | D13Wsu177e  | peroxisome  | lipid metabolism   |
|                        | NM_010412  |   | Hdac5   | cytoplasm;histone deacetylase co  | unknown  |
|                        | AK003400   | 68566   | Calcyon   | integral to membrane  | cell cycle   |
| The second second      | NM_009069  |   | Ritt  | plasma membrane   | signaling<br>signaling   |
|                        | AK007703   | 27410   | Abca3   | integral to plasma membrane   | misc   |
|                        | AK017214   | 71323   | 71000   |   | tumor related  |
|                        | NM_007591  |   | Calr  | endoplasmic reticulum lumen;extr  | cell adhesion  |
|                        | AK005345   | 69029   |   | extracellular space; integral to  | unknown  |
|                        | NM_008903  |   | Ppap2a  | integral to plasma membrane;memb  | metabolism   |
|                        | NM_00822   |   | Hdac2   | cytoplas mchistone deacetylase co   | transcription  |
| <b>一种一种一种一种</b>        | AK018560   | 67556   | Pigm  |   | metabolism?  |
|                        | NM_00892   |   | Dnajc3  | cytoplas mextracellular space   | translation  |
|                        | AF072758   | 26568   | Sic27a3   | Integral to membrane  | transport .  |
| 行 <b>的</b> 。           | NM_00961   |   | Adam15  | extracellular matrix extracellul  | protein degradation  |
|                        | AB047820   | 104416  | Bap1  | nucleus   | protein degradation  |
|                        |  |   |   |   | -  |
|                        | NM_01678   | 9 53324   | Nptx2   | extracellular space; integral to  | Transport  |
|                        | NM_00793   |   | Nptx2<br>Enc1   | extracellular space; integral to cytoskeleton   | Transport<br>ctsk  |
|                        | 117  | 0 13803   |   |   |  |
|                        | NM_00793<br>NM_01162   | 0 13803<br>2 21968  | Enc1  | cytoskeleton  | ctsk   |
|                        | NM_00793<br>NM_01162<br>NM_01059<br>NM_00897   | 0 13803<br>2 21968<br>5 16485<br>4 19244  | Enc1<br>Tom1  | cytos keleton<br>Godgi stack; membrane  | ctsk<br>transport  |
|                        | NM_00793<br>NM_01162<br>NM_01059   | 0 13803<br>2 21968<br>5 16485<br>4 19244  | Enc1<br>Tom1<br>Kcna1   | cytos keleton<br>Golgi stack; membrene<br>voltage-gated potas sium channel  | ctsk<br>transport<br>transport   |
|                        | NM_00793<br>NM_01162<br>NM_01059<br>NM_00897   | 0 13803<br>2 21968<br>5 16485<br>4 19244<br>6 56330   | Enc1<br>Tom1<br>Kcna1<br>Ptp4a2   | cytoskeleton<br>Golgi stack;membrene<br>voltage-gated potassium channel<br>soluble frection   | ctsk<br>Vansport<br>Vansport<br>signaling  |
|                        | NM_00793<br>NM_01162<br>NM_01059<br>NM_00897<br>NM_01974<br>NM_01352<br>NM_02154   | 0 13803<br>2 21968<br>5 16485<br>4 19244<br>6 56330<br>5 14455<br>8 59046   | Enc1<br>Tom1<br>Kcna1<br>Ptp4a2<br>Pdcd5  | cytoskeleton<br>Golgi stack;membrene<br>voltage-gated potassium channel<br>soluble frection   | ctsk transport transport signaling apoptosis   |
|                        | NM_00793<br>NM_01162<br>NM_01059<br>NM_00897<br>NM_01974<br>NM_01352<br>NM_02154<br>NM_00986   | 0 13803<br>2 21968<br>5 16485<br>4 19244<br>6 56330<br>5 14455<br>8 59046<br>1 12540  | Enc1<br>Tom1<br>Kcna1<br>Ptp4a2<br>Pdcd5<br>Gas5  | cytoskeleton Golgi stack;membrane voltage-gated potassium channel soluble fraction cytoplasm  | ctsk transport transport signaling apoptosis cell cycle  |
|                        | NM_00793<br>NM_01162<br>NM_01059<br>NM_00897<br>NM_01974<br>NM_01352<br>NM_02154<br>NM_00986<br>NM_02598   | 0 13803<br>2 21968<br>5 16485<br>4 19244<br>6 56330<br>5 14455<br>8 59046<br>1 12540<br>7 67130   | Enc1<br>Tom1<br>Kcna1<br>Ptp4a2<br>Pdcd5<br>Gas5<br>Arpp19                                  | cytoskeleton Golgi stack;membrane voltage-gated potassium channel soluble frection cytoplas m   | ctsk transport vransport signaling apoptosis cell cycle transport?   |
|                        | NM_00793<br>NM_01162<br>NM_01059<br>NM_00897<br>NM_01974<br>NM_01352<br>NM_02154<br>NM_0258<br>NM_02598  | 0 13803<br>2 21968<br>5 16485<br>4 19244<br>6 56330<br>5 14455<br>8 59046<br>1 12540<br>7 67130<br>7 52231  | Enc1<br>Tom1<br>Kcna1<br>Pp4a2<br>Pdcd5<br>Gas5<br>Arpp19<br>Cdc42                          | cytos keleton Golgi s tack; membre ne voltage-gated potas sium channel soluble frection cytoplas m filopodium   | cts k transport transport signaling apoptosis cell cycle transport 7 signaling   |
|                        | NM_00793<br>NM_01162<br>NM_01059<br>NM_01974<br>NM_01352<br>NM_02154<br>NM_02598<br>NM_02598<br>NM_02598   | 0 13803<br>2 21968<br>5 16485<br>4 19244<br>6 56330<br>5 14455<br>8 59046<br>1 12540<br>7 67130<br>7 52231<br>70061                                       | Enc1<br>Tom1<br>Kcna1<br>Ptp4a2<br>Ptcd5<br>Gas5<br>Arpp19<br>Cdc42<br>Ndufa6               | cytos keleton Golgi s tack; membre ne voltage-gated potas sium channel soluble frection cytoplas m filopodium   | ctsk transport transport signaling apoptosis cell cycle transport? signaling matabolism  |
|                        | NM_00793<br>NM_01162<br>NM_01059<br>NM_00897<br>NM_01974<br>NM_01352<br>NM_02154<br>NM_02986<br>NM_02598<br>NM_02661<br>NM_0267857                       | 0 13803<br>2 21968<br>5 16485<br>4 19244<br>6 56330<br>5 14455<br>8 9046<br>1 12540<br>7 67130<br>7 52231<br>70061<br>5 79560                             | Enc1<br>Tom1<br>Kcna1<br>Ptp4a2<br>Ptcd5<br>Gas5<br>Arpp19<br>Cdc42<br>Ndufa6               | cytos keleton Golgi s tack; membre ne voltage-gated potas sium channel soluble frection cytoplas m filopodium   | ctsk transport transport signaling apoptosis cell cycle transport? signaling matabolism transcription?                                       |
|                        | NM_00793<br>NM_01162<br>NM_01059<br>NM_01059<br>NM_01974<br>NM_01352<br>NM_02154<br>NM_02598<br>NM_02598<br>NM_02618<br>NM_02618<br>NM_02447             | 0 13803<br>2 21968<br>5 16485<br>4 19244<br>6 56330<br>5 14455<br>8 59046<br>7 67130<br>7 52231<br>70061<br>5 79560<br>66151                              | Enc1<br>Tom1<br>Kcna1<br>Ptp4a2<br>Pdcd5<br>Gas5<br>Arpp19<br>Cdc42<br>Ndufa6<br>D1Ertd161e | cytos keleton Golgi sitzek; membrane voltage-gated potas sium channel soluble fraction cytoplas m eytoplas m filopodium mitochondrion   | cts k transport transport signaling apoptos is cell cycle transport? signaling metabolis m transcription 7 metabolis m                       |
|                        | NM_00793<br>NM_01162<br>NM_01059<br>NM_00897<br>NM_01974<br>NM_01352<br>NM_02154<br>NM_02588<br>NM_02618<br>AK007857<br>NM_02447<br>AK003850<br>NM_01968 | 0 13803<br>2 21968<br>5 16485<br>4 19244<br>6 56330<br>5 14455<br>8 59046<br>1 12540<br>7 67130<br>7 52231<br>7 70061<br>5 79560<br>66151                 | Enc1<br>Tom1<br>Kcna1<br>Ptp4a2<br>Pdcd5<br>Gas5<br>Arpp19<br>Cdc42<br>Ndufa6<br>D1Ertd161e | cytoskeleton Golgi stack;membrane voltage-gated potassium channel soluble fraction cytoplas m filopodium mitochondrion  protessome regulatory particle (  | ctsk transport transport signaling apoptosis cell cycle transport ? signaling metabolism transcription ? metabolism unknown                  |
|                        | NM_00793<br>NM_01162<br>NM_01059<br>NM_00897<br>NM_01974<br>NM_02154<br>NM_02154<br>NM_02598<br>NM_02618<br>AK007857<br>NM_02447<br>NM_02447<br>NM_01968 | 0 13803<br>2 21968<br>5 16485<br>4 19244<br>6 56330<br>5 14455<br>8 59046<br>1 12540<br>7 67130<br>7 52231<br>70061<br>70061<br>66151<br>6 56506<br>68708 | Enc1 Tom1 Kcna1 Ptp4a2 Ptcd5 Gas5 Arpp19 Cdc42 Ndufa6 D1Erid161e BC002236                   | cytos keleton Golgi s tack; membre ne voltage-gated potas sium channel soluble frection cytoplas m Glopodium mitochondrion  protessome regulatory particle ( extracellular metrix synaptic vesicle early endosome | cts k transport transport signaling apoptosis cell cycle transport 7 signaling metabolis m trans cription 7 metabolis m unknown ecm          |
|                        | NM_00793<br>NM_01162<br>NM_01059<br>NM_00897<br>NM_01974<br>NM_01352<br>NM_02154<br>NM_02588<br>NM_02618<br>AK007857<br>NM_02447<br>AK003850<br>NM_01968 | 0 13803<br>2 21968<br>5 16485<br>4 19244<br>6 56330<br>7 67130<br>7 52231<br>70061<br>5 79560<br>66151<br>66 56506<br>68708<br>68375                      | Enc1<br>Tom1<br>Kcna1<br>Ptp4a2<br>Pdcd5<br>Gas5<br>Arpp19<br>Cdc42<br>Ndufa6<br>D1Ertd161e | cytos keleton Golgi s tack; membra ne voltage-gated potas sium channel soluble frection cytoplas m Glopodium mitochondrion  protessome regulatory perticle ( extracellular matrix synaptic vesicle                | cts k transport transport signaling apoptosis cell cycle transport 7 signaling metabolis m transcription 7 metabolis m unknown ecm signaling |

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|---------------------|-----------------------------------|-----------|-----------|----------------------|-----------------------------|----------|------------------|----------------------------------|-----------------|------------------|----------------------|-----------------|----------------------------------|-----------------------------------|---------------------------------|---------------|----------|---------------------|---------------------------------|-----------------------------|
| BIOLOGICAL FUNCTION | metabolism                        | signating | signaling | metabolism           | cell adh                    | unknawn  | apoptosis        | gulangis .                       | transport       | signaling        | signaling (receptor) | unknown         | translation                      | cell cycle                        | Transport                       | tumor related | mlsc     | ctsk                | metabolism                      | signaling (body weight)     |
| LOCALIZATION        | biotin carboxylase complex; extra |           | lysosome  | mitochondrial matrix | integral to plasma membrane |          | cytoplasmuncieus | Golgi apparatus;Integraf to memb | mitochondrion   | cytopiasm        |                      | ribosome        | cytosolic ribosome (sensu Eukary | centrosome; candensed chromosome; | extracellular space;integral to | cytoplasm     |          | actin cytos keleton | endoplasmic reticulumintegral t | integral to plasma membrane |
| GENE                | Pccb                              |           |           | Tst                  | r.                          |          | Rnf7             | Nsg1                             | Ndufb2          | Chn1             |                      |                 | R ps 16                          | H2afy                             | Npt/2                           |               | a lot    | P fn2               | Alg5                            | Npy2r                       |
| rocus               | 66904                             | 69082     | 74008     | 22117                | 57278                       | 75734    | 19823            | 18196                            | 68198           | 108699           | 57757                | 66492           | 20055                            | 26914                             | 53324                           | 246257        |          | 18645               | 66248                           | 18167                       |
| ACCESS LOCUS GENE   | NM 025835                         | AK007452  | AK018132  | NM 009437            | BC 004826                   | AK017226 | AF092877         | NM 010942 18196                  | NM 026612 68198 | NM 029716 108699 | NM 021319 57757      | WM 025594 66492 | NM 013647 20055                  | AB071988                          | ES NM 016789 53324              | AK009308      | AF030001 | NM 019410 18645     | AK003818                        | MM_008731 18167             |
|                     |                                   |           |           |                      |                             |          | Į.               |                                  |                 | *                |                      |                 |                                  |                                   |                                 |               |          |                     |                                 |                             |
|                     |                                   | ,         |           | 64                   |                             |          |                  |                                  |                 |                  |                      |                 |                                  |                                   |                                 |               |          |                     |                                 |                             |
|                     |                                   |           |           |                      |                             |          |                  |                                  |                 |                  |                      | -               |                                  |                                   |                                 |               |          |                     |                                 |                             |

Colon-192 Breast-192 Breast-72 Breast-72 Lung-72 Lung-72



Figure 40 B



| ACCESS   | Locus   | GENE   | LOCALIZATION  | BIOLOGICAL FUNCTION   |
|--|---|--|---|---|
| AK003863   | 26901   | Deb1   | extracellular   | unknown   |
| NM_01690   |   | S yt5  | integral to membrane;synapse;syn  | traffic   |
| NM_02593   |   |  | nucleus   | transcription ?   |
| NM_01875   |   | Nme6   | extracellular space; microtubule  | meta bollsm   |
| AK005033   | 52432   | P pp2r2d   | protein phosphatase type 2A comp  | signating   |
| NM_02589   |   |  |   | unknown   |
| NM_00801   |   | Fkbp1a   | cytoplasm; membrane   | transport, translation  |
| AK013035   | 20621   | Snn  | integral to membrane  | misc  |
| NM_02319   |   | C >= -410  | heterotrimeric G-protein complex  | signaling?  |
| NM_02299   |   | S tard10   | Integral to membrane  | tumor related   |
| AY026384   | 192655  | Cacna1i  | Diagram & MeMburn   | misc transport  |
| NM_01158   |   | Trim28   | chromatin; nucleus  | transcription   |
| AK004778   | 74122   |  | integral to membrane  | unknown   |
| NM_02372   |   | Atp6v1d  | hydrogen-transporting ATPase V1   | Transport   |
| NM_00780   | 7 13591   | Ebf1   | nucleus   | transcription   |
| L34676   | 11784   | Apba2  |   | signaling   |
| NM_00898   | 4 19274   | Ptprm  | extracellular space; integral to  | signaling (receptor)  |
| AK016563   |   | D2E rtd435e  |   | ctsk  |
| NM_0112  |   | Rabggtb  | cytoplasm   | misc  |
| NM_0081:   |   | Gelm   |   | misc  |
| BC017532   |   | Abhd4  |   | protein degradation   |
| NM_0264  |   | Rgs19  | Golgi apparatus; heterotrimeric G   | transcription   |
| AK007389   |   | S nrpd2  | small nucleolar ribonucleoprotei  | trans cription  |
| NM_0196  |   | Fmnl   | cytosol   | ctsk-   |
| NM_0169  | <del></del>   | S Ic9a1  | basolateral plasma membrane;extr  | transport   |
| NM_0314  |   | Actic  | SWI-SNF complex;actin filement  | unknown   |
| AK 020600  |   | Acti6  | 3 Wi-3 Wr Complex, a continent  | ctsk  |
| NM_0205  |   |  | integral to membrane  | Unknown   |
| AF 06256   |   | Sp3  | transcription factor complex  | transcription   |
| NM_0260  |   |  | cytoplasm; extra cellular space; in   | unknown   |
| AK02100  |   | Stch   | extracellular space   | translation   |
| NM_0084  | 80 16772  | Lama 1   | basal lamina;extracellular space  | ecm   |
| BC00224  | 0 66310   |  | integral to membrane; nucleus   | lipid metabolism  |
| AK01822  |   |  | Integral to membrane  | unknown   |
| NM_0312  |   | Cstf2t   | mRNA cleavage stimulating factor  | transcription   |
| 12.31 NM_0169  |   | Tsnax  | mitochondrial inner membrane; nuc   | misc  |
| NM_0135  |   | Mbd3   | chromatin; nucleus  | transcription   |
| AK 01360   |   |  |   | unknown   |
| NM_0262  |   | As   | non-muscle myosin   | unknovm   |
| AK01433<br>AK01457   |   | Armet  | extracellular space   | tumor related   |
| INM OLES   |   | FutB   | Golgi apparatus;extracellular sp  | unknown   |
| BC00690  |   | 1 4 4  | all abbaraces out necticity ab  | Immune response   |
| 11 Total Arterial Schools Sterry and American Schools Sterry Laboratory and American Schools Schools Sterry Laboratory and American Schools Sterry Laboratory and American Schools Sterry Laboratory and American Schools Schools Sterry Laboratory and American Schools Sterry Laboratory and American Schools School |   |  |   |   |
| AK02726  |   | Lrm6a  | plasma membrana ?   |   |
| AK02726 AK01055  | 2 235402  | ! Lrm6a  | plasma membrana ?   | cell adh ?  |
| And the second s | 2 235402<br>5 69746   |  | plasma membrana ?   | cell adh 7  |
| AK01055  | 2 235402<br>5 69746<br>004 107569   |  |   | cell adh 7<br>unknown   |
| AK01055<br>NM_0266<br>BC01762<br>NM_019  | 2 235402<br>5 69746<br>004 107569<br>17 66995<br>718 56350  |  | eukaryotic translation initiatio  | cell adh ?<br>unknown<br>trans lation   |
| AK01055 NM_0266 BC01762 NM_019 AK01093   | 2 235402<br>5 69746<br>004 107569<br>7 66995<br>718 56350<br>9 68196  | Nt5c3  | eukaryotic translation initiatio  | cell adh ?<br>unknovan<br>trans lation<br>unknovan  |
| AK01055 NM_026i BC01762 NM_019 AK01093 NM_025  | 2 235402<br>5 69746<br>004 107569<br>77 66995<br>718 56350<br>9 68196<br>668 66624  | Nt5c3 Ari3 Hsbp1   | eukaryotic translation initiatio nucleolus Golgi apperatus extracellular;nucleus endoplasmic reticulum;integral t   | cell adh ? unknown trans lation unknown signaling   |
| AK01055 NM_026 BC01762 NM_015 NM_015 NM_015 NM_025 NM_025  | 2 235402<br>5 69746<br>004 107569<br>17 66995<br>718 56350<br>9 68196<br>668 66624<br>727 11980   | 3 Nt5c3<br>Ari3<br>Hsbp1<br>Atp8a1                                 | eukaryotic translation initiatio nucleolus Golgi apperatus extracellular;nucleus endoplasmic reticulum;integral t integral to membrane  | cell adh ? unknown trans lation unknown signaling trans cription misc transport, metabolism   |
| AK01055 NM_026 BC01762 NM_019 AK01093 NM_025 NM_025 NM_026 NM_025  | 2 235402<br>5 69746<br>004 107569<br>17 66995<br>118 56350<br>19 68196<br>1668 56624<br>1727 11980<br>1794 56445  | Ari3<br>Hsbp1<br>Atp8a1<br>Dnaja2                                  | eukaryotic translation initiatio nucleolus Golgi apparatus extracellular,nucleus endoplasmic reticulum;integral t integral to membrane membrane   | cell adh ? unknown trans lation unknown signating transcription misc transport, metabolism translation  |
| AK01055 NM_0266 BC01766 NM_019 AK01093 NM_025 NM_025 NM_009 NM_D19 BC00566   | 2 235402<br>5 69746<br>004 107569<br>67 66995<br>718 56350<br>9 68196<br>668 56624<br>727 11980<br>794 56445<br>03 68776  | 3 Nt5c3<br>Ari3<br>Hsbp1<br>Atp8a1                                 | eukaryotic translation initiatio nucleolus Golgi apperatus extracellular;nucleus endoplasmic reticulum;integral t integral to membrane  | cell adh ? unknown translation unknown signaling transcription misc transport, metabolism translation transcription   |
| AK01055 NM_0266 BC01762 NM_019 AK01095 NM_025 NM_025 NM_009 NM_019 BC00566   | 2 235402<br>5 69746<br>107569<br>677 66995<br>718 56350<br>19 68196<br>6668 66624<br>727 11980<br>794 56445<br>8 68776  | Ari3<br>Hsbp1<br>Atp8a1<br>Dnaja2<br>Tar11                         | eukaryotic translation initiatio nucleolus Golgi apparatus extracellular;nucleus endoplasmic reticulum;integral t integral to membrane membrane transcription factor TFIID compl  | cell adh ?  unknown  trans lation  unknown  slgnaling  transcription  misc  transport, metabolism  translation  transcription  unknown  |
| AK01055 NM_026( BC01762 NM_019 AK01093 NM_025 NM_025 NM_009 NM_019 BC0056( AB0391 NM_019   | 2 235402<br>5 69746<br>004 107569<br>07 66995<br>718 56350<br>9 68196<br>6668 66624<br>727 11980<br>794 56445<br>03 68776   | Arl3 Hsbp1  Atp8a1 Dnaja2 Tarl1  Tmeff2                            | eukaryotic translation initiatio nucleolus Golgi apparatus extracellular;nucleus endoplasmic reticulum;integral t integral to membrane membrane transcription factor TFIID compl  | cell adh ?  unknown  translation  unknown  signaling  transcription  misc  transport metabolism  translation  transcription  unknown  signaling   |
| AK01055 NM_026( BC01762 NM_019 AK01093 NM_025 NM_002 NM_0019 BC0056( AB0391 NM_019 AK0101  | 2 235402<br>5 69746<br>107566<br>718 56350<br>19 68196<br>668 56624<br>727 11980<br>794 56445<br>3 68776<br>8   | Ari3 Hsbp1  Atp8a1 Dnaja2 Tari1  Tmeff2 Drap1                      | eukaryotic translation initiatio nucleolus Golgi apparatus extracellular;nucleus endoplasmic reticultum/integral t integral to membrane membrane transcription factor TFIID compl Integral to membrane negative cofactor 2 complex  | cell adh ?  unknown trans lation unknown signaling trans cription misc trans port metabolism trans lation trans cription unknown signaling transcription  |
| AK01055 NM_026 BC01762 NM_019 AK01095 NM_025 NM_025 NM_026 NM_026 NM_025 NM_019 BC0056 NM_019 AK0101 AK0101 AK0101 AK0101 AK0101   | 2 235402<br>5 69746<br>107566<br>17 66995<br>178 56350<br>19 68196<br>1668 56624<br>1727 11980<br>1794 56445<br>13 68776<br>18<br>1790 56363<br>19 66363  | Ari3 Hsbp1  Atp8a1 Dnaja2 Tari1  Tmeff2 Drap1 Exosc8               | eukaryotic translation initiatio nucleolus Golgi apperatus extracellular;nucleus endoplasmic reticulum;integral t integral to membrane membrane transcription factor TF IID compl  integral to membrane negative cofactor 2 complex exosome (R Nase complex);nucleus        | cell adh ?  unknown trans lation  unknown signaling trans cription  misc trans port, metabolism trans lation trans cription unknown signaling trans cription unknown signaling trans cription trans cription                              |
| AK01055   NM_0266   BC01762   NM_019   NM_019   NM_025   NM_009   NM_025   NM_009   NM_019   BC00566   AB0391   NM_019   AK0101   AK0095   NM_028   | 2 235402<br>5 69746<br>107566<br>17 66995<br>17 66995<br>19 68196<br>668 66624<br>177 11980<br>1794 56445<br>133 68776<br>18<br>1790 56363<br>162 66556<br>14 69639<br>457 75826  | Ari3 Hsbp1  Atp8a1 Dnaja2 Tari1  Trmeff2 Drap1 Exosc8 Senp2        | eukaryotic translation initiatio nucleotus Golgi apparatus extracellular;nucleus endoplasmic reticulum;integral t integral to membrane membrane transcription factor TFIIID compl Integral to membrane negative cofactor 2 complex exosome (R Nase complex);nucleus nucleus | cell adh ?  unknown  trans lation  unknown  signating  trans cription  misc  trans port metabolism  trans ation  trans cription  unknown  signating  trans cription  trans cription  trans cription  signating  trans cription  signating |
| AK01055 NM_026 BC01762 NM_019 NM_019 NM_025 NM_009 NM_025 NM_009 NM_019 BC00566 AB0391 NM_019 NM_019 AK0101 AK0101 AK0095 NM_028   | 2 235402<br>5 69746<br>107566<br>17 66995<br>18 56350<br>19 68196<br>568 56624<br>177 11980<br>1794 56445<br>1790 56363<br>1790 56363 | Ari3 Hsbp1  Atp8a1 Dnaja2 Tari1  Trmeff2 Drap1 Exosc8 Senp2        | eukaryotic translation initiatio nucleolus Golgi apperatus extracellular;nucleus endoplasmic reticulum;integral t integral to membrane membrane transcription factor TF IID compl  integral to membrane negative cofactor 2 complex exosome (R Nase complex);nucleus        | cell adh ? unknown trans lation unknown signating transcription misc trans port, metabolism transcription unknown signating transcription unknown signating transcription signating transcription signating transcription signating       |
| AK01055 NM_026 BC01762 NM_019 NM_019 NM_025 NM_026 NM_026 NM_026 NM_026 NM_026 NM_026 NM_026 NM_028 NM_028 NM_028 NM_028   | 2 235402<br>5 69746<br>107569<br>17 66995<br>18 66390<br>19 68196<br>668 66624<br>127 11980<br>194 56445<br>193 68776<br>198 69639<br>457 75826<br>1122 10805<br>173 69441  | Ari3 Hsbp1  Atp8a1 Dnaja2 Tari1  Tmeff2 Drap1 Exosc8 Senp2 Sic14a1 | eukaryotic translation initiatio nucleotus Golgi apparatus extracellular;nucleus endoplasmic reticulum;integral t integral to membrane membrane transcription factor TFIIID compl Integral to membrane negative cofactor 2 complex exosome (R Nase complex);nucleus nucleus | cell adh ?  unknown  trans lation  unknown  signating  trans cription  misc  trans port metabolism  trans ation  trans cription  unknown  signating  trans cription  trans cription  trans cription  signating  trans cription  signating |

Colon-18 Colon-72 Colon-192 Breast-18 Breast-192 Lung-18

NM\_021543

| Figure 41 BIOLOGICAL FUNCTION | signaling  | unknown         | cell adh                    | protein degradation | mlsc               |   | 18 18 C 192 C 182 C 182 C 182 C 182 C 182 C 183 |
|-------------------------------|--|-----------------|-----------------------------|---------------------|--------------------|---|---|
| LOCALIZATION                  | Golgl apparatus;endoplasmic rett   |                 | Integral to plasma membrane | cymplasm            | өхтасеllular space |   | 200 00'0 500 01'0 51'0<br>(out.) <sup>2</sup> 507   |
| GENE                          |  |                 | Pcdh8                       | Uchil               | Mrsb               |   | 4   |
| Snoon                         | 76308  | 69008           | 18530                       | 22223               | 76467              |   |   |
|                               | A CONTRACTOR OF THE PARTY AND ADDRESS OF THE P | NM_026908 69008 |                             | 44                  | AK009912 76467     | Colon-18<br>Colon-792<br>Breast-18<br>Breast-72<br>Breast-192<br>Lung-72<br>Lung-72 |   |
| 2011-2                        | ttio)  |                 |                             |                     |                    |   | Log <sub>2</sub> (ratio)  |

BIOLOGICAL FUNCTION signaling (receptor) Figure 42 AK 003735 turnor related transcription unknown unknown misc endoptas mic reticulum extracellu NM\_023805 integral to plasma membrane transcription factor complex NM\_019802 integral to membrane Integral to membrane LOCALIZATION ~ Log<sub>2</sub>(ratio) NM\_009046 D2Bwg0891e NM\_008560 GENE Ggcx Mc2r Upk2 Access Locus 05.0 21.0 01.0 20.0 NM\_019802 56316 52840 NM\_009046 19698 NM\_008560 17200 76257 NM\_009476 22269 Log<sub>2</sub>(ratio) NM\_009476 NM\_023805 AK003735 AK013604 Z61-Bun7 շլ-ճսող AK013604 8լ-**Ֆսո**ղ Breast-192 Breast-72 Breast-18 Colon-192 σς Log<sub>2</sub>(ratio) Colon-72 81-nolo J

1

|           |                     | 1                      | 1               | 1               | 1                                |                                 |   |  |                     |
|-----------|---------------------|------------------------|-----------------|-----------------|----------------------------------|---------------------------------|---|--|---------------------|
| Figure 43 | BIOLOGICAL FUNCTION | cell cycle             | transport?      | apoptosis       | urknown                          | Transport                       |   | ■ 18 C B 192 C D 192 B D 192 C D 192 |                     |
|           | LOCALIZATION        | •                      | cytoplasm       | cytoplasm       | proteasome regulatory particle ( | extracellular space;integral to |   |  | NM_016789 NM_024475 |
|           | GENE                | Gas5                   | Arpp19 c        | Pdcd5 c         | BC002236 P                       | Nptx2 e                         |   | (01107)260J  | 10                  |
|           | ACCESS LOCUS        | 14455                  | NM_021548 59046 | NM_019746 56330 | NM_024475 79560                  | MM_016789 53324                 |   |  | NM_013525           |
|           | ACCE                | NM_013525              | NM_021          | *1              |                                  |                                 | 291-325918<br>81-gnuJ<br>27-gnuJ<br>291-gnuJ                      |  | NM_021548           |
|           | 052                 |                        |                 | ì               |                                  |                                 | 8 f-noio D<br>C olon-72<br>C olon-192<br>8 f-ass-18<br>S f-ass-18 |  | NM_019746           |
|           | 0.0                 | 3 <sub>2</sub> (ratio) |                 |                 |                                  |                                 |   | Log <sub>2</sub> (ratio)   | 0-                  |

| Figure 44 | BIOLOGICAL FUNCTION | transcription                     | metabolism? | celi adhesion                    | protein degradation? | transcription                 |                           | mabolism                       | transport                  |  | ipid merabolism                  | apoptosis  |           |
|-----------|---------------------|-----------------------------------|-------------|----------------------------------|----------------------|-------------------------------|---------------------------|--------------------------------|----------------------------|--|----------------------------------|--|-----------|
|           | LOCALIZATION        | cytoplasm;his tone deacetylase co |             | endoplasmic reticulum lumen;extr |                      | > Classical made of the first | transcription is confused | cymples mtintegral to membrane | isemic reticulum membrane; | alicopressions and alicopression and alicopressi | extracellular space;glycerol-3-p | extracellular  |           |
|           | GENE                | Hdac2                             | Pigm        | Cat                              | Rnf171               |                               | Pax8                      | Faci4                          | :                          |  | Gpd2                             | Mam1   |           |
|           | Locus               | 15182                             | 67556       | 12317                            | 75212                | 1                             | 18510                     | 50790                          |                            | 17540  | 14571                            | 17237  | 2         |
|           | ACCESS LOCUS GENE   | 報報 NM 008229 15182                | AK018560    | ٠,٠                              |                      | ANDIOUS                       | NM_011040 18510           | 08705 7740 MM                  |                            | NM_010826 17540  | 14571 14571                      | TY 17237   | ANOI 1147 |
|           |                     | **                                |             |                                  |                      |                               |                           |                                | 1                          | The same   |                                  | The state of the s |           |

Colon-192

Colon-192

Log<sub>2</sub>(ratio)

Log<sub>2</sub>(ratio)

Log<sub>2</sub>(ratio)

Anoison

Anoison

Anoison

Anoison

Anoison

Anoison

Anoison

Anoison

Anoison

Anoison

Anoison

Anoison

-0.1 0.0 0.2 Log<sub>3</sub>(ratio)

| Figure 45 | BIOLOGICAL FUNCTION | transport       | Transport                        | metabolism                       |
|-----------|---------------------|-----------------|----------------------------------|----------------------------------|
|           | LOCALIZATION        | mitochondrion   | extracellular space, integral to | endoplasmic reticulum;integral t |
|           | GENE                | Ndufb2          | Nptx2                            | Alg5                             |
|           | rocus               | 68198           | 53324                            | 66248                            |
|           | ACCESS LOCUS GENE   | NM_026612 68198 | NM_016789 53324 Npk2             | AK003818 66248 Alg5              |
|           |                     |                 |                                  |                                  |

Colon-18 Colon-72 Colon-192 Breast-18 Breast-72 Breast-192 Lung-192 Lung-192



761-gnuJ

71-Bun7 81-Bunl

Breast-72 Breast-18

Colon-192 Colon-72 Colon-18

| rigure 40 | BIOLOGICAL FUNCTION | transcription                    | CDK         | translation         | unknown   | turnor related      | unknown           | transcription                    | lipid metabolism              | unknown              |
|-----------|---------------------|----------------------------------|-------------|---------------------|-----------|---------------------|-------------------|----------------------------------|-------------------------------|----------------------|
|           | LOCALIZATION        | transcription factor TFIID compl |             | extracellular space | nucleolus | extracellular space | nan-muscle myosin | small nucleolar ribonucleoprotei | integral to membrane; nucleus | integral to membrane |
|           | GENE                | Taril                            | D2E rtd435e | Stch                |           | Armet               |                   | S nrpd2                          |                               |                      |
|           | Locus               | 68776                            | 51885       | 110920 Stch         | 66995     | 74840               | 67529             | 107686 Snrpd2                    | 66310                         | 76161                |
|           | ACCESS LOCUS GENE   | BC005603                         | AK016563    | ı                   | BC017627  | AK014338            | NM_026218 67529   | AK007389                         | BC002240                      | AK018222             |
|           |                     | -                                | Land        |                     |           |                     |                   |                                  |                               |                      |
|           |                     |                                  | ونبار       | -                   | ļ         | _ · - ·             |                   |                                  | · · · · ·                     |                      |
|           |                     | is in                            |             | FI                  | ,!!,<br>! |                     |                   |                                  | Ì                             |                      |
|           |                     |                                  |             | }                   |           | 1                   |                   |                                  |                               |                      |
| Γ         | [2                  | ~                                |             |                     |           |                     |                   |                                  |                               |                      |

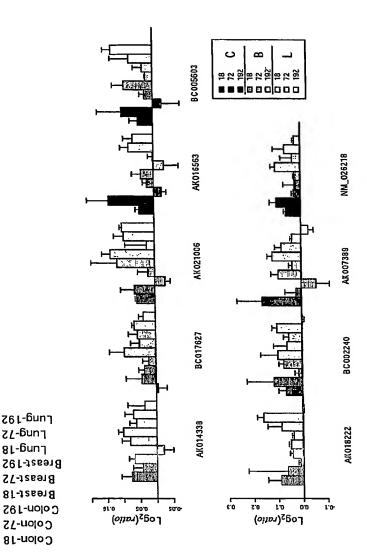


Figure 47

DIFFERENTIALLY EXPRESSED GENES (SELECTED)

Breast Cancer

ৰ

|       | NM_007529   | Bcan<br>Armet                         | apliazi i Sayoopoodi<br>brevican<br>arcinina-rich. mulated in early stage tumors  | signaling / ecm<br>tumor related  | hypothalamus<br>midbrain   |
|-------|---|---------------------------------------|---|---|--|
| Colon | 7   |                                       |   |   |  |
|       | Macaestath NM_026523 NM_009215 NM_009129 AK011747 NM_008497 NM_080639 | Seg Sog Mund Mund Mund Mund Lib Timp4 | richaribiloti neuromedin B epiregulin somatostatin secretogranin II mahogunin, ring finger 1 luteinizing hormone beta tissue inhibitor of metalloproteinase 4 | cido; it<br>signating<br>cell cycle<br>growth factor (secreted)<br>apoptosis<br>growth factor (secreted)<br>protein degradation | Region prefrontal cortex prefrontal cortex hypothalamus hypothalamus hypothalamus midbrain |

| Lung | Cancel |
|------|--------|
|      | _      |

|           |          |                                      | stanaling (soluble)         | prefrontal cortex |
|-----------|----------|--------------------------------------|-----------------------------|-------------------|
| NM_026523 | QWN<br>Q | neuramedin b                         | (childo) sellendo           | nrefrontal cortex |
| NM_054069 | Pebpc1   | prostatic steroid binding protein C1 | Signating (Souther)         | prefrontal cortex |
| AF162224  | Angpt[3  | angiopoletin-like 3                  | eagnating                   | hwothelamis       |
| NM_008734 | Nrg3     | neuregulin 3                         | growin racioi (secretari)   | hynothalamus      |
| NM_009215 | Sat      | somatostatin                         | grawin lactor (secretary)   | hypothalamus      |
| NM_011025 | ö        | oxytocln .                           | signating (solution)        | hwothalamis       |
| NM_021704 | Cxd12    | chemokine (C-X-C motif) ligand 12    | Immune response (secretary) | midhrain          |
| NM_011328 | Sct      | secretin                             | signating (secretori)       | midbrain          |
| NM 010883 | Mdbh     | Norrie disease homolog               | Signatura (Sectionary       |                   |

Figure 48 ( 73)

| Accesion.   | Gene      | A CARACTER AND THE CONTRACT OF |                       |                   |
|-------------|-----------|--|-----------------------|-------------------|
| 132178      | Slc6a1    | solute carrier family 6 (neurotransmitter transporter, GABA), member 1   | transport             | prefrontal cortex |
| NM 008285   | Hdh1      | histamine receptor H 1   | signaling (receptor)  | prefrontal cortex |
| NM 018882   | Gor56     | G protein-coupled receptor 58  | signaling (receptor)  | prefrontal cortex |
|             |           |  | immune response       |                   |
| NM 020518   |           | RIKEN cDNA 2210413P10 gene   | (receptor)            | prefrontal cortex |
| NM 023805   | Slc38a3   | solute carrier family 38, member 3   | transport             | prefrontal cortex |
| AK011457    | Silintes  | SLIT and NTRK-like family, member 5  | misc                  | Hypothalamus      |
| NIM Offerso | Notes of  | neuronal pentraxin 2   | Transport             | Hypothalamus      |
| AKODEBS7    | Slc38ad   | solute carrier family 38, member 4   | transport             | Hypothalamus      |
| AIM MADE    | A19ER714  | expressed sequence AI256711  | signaling (receptor)  | Hypothalamus      |
| ecocoo_mini | 11000     |  | immune response       |                   |
| And Andono  | 4         | intentin, alpha E. ebithelial-associated   | (receptor)            | Hypothalamus      |
| NW_UOOSS    | igae      |  | call adh 2            | Hynothalamus      |
| NM_020293   | Cldn9     | claudin 9  | cell adil :           | and the second    |
| NM 019772   |           | RIKEN cDNA 1110004F10 gene   | protein degradation ? | Hypothalamus      |
| NM 007874   | Dod       | deleted in polyposis 1   | tumor related         | Hypothalamus      |
| A.1276505   | Tufrsf22? | tumor necrosis factor receptor superfamily, member 22 ?  | signaling (receptor)  | Hypothalamus      |
| NM OO7495   | Astn1     | astrotactin 1  | misc                  | Hypothalamus      |
| NM 008377   | Z E       | leucine-rich repeats and immunoglobulin-like domains 1   | tumor related         | Hypothalamus      |
|             | •         | sema domain, immunoglobulin domain (Ig), and GPI membrane anchor,  |                       | ejon-fleib.       |
| NM 011352   | Sema7a    | (semaphorin) 7A  | signaling (receptor)  | Midhain           |
| NIM 011020  | Clend     | chloride channel 6   | ranspor               | MICDIAN           |

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|----------|---------------|---|--|----------------------|-------------------|
|          | Accesion      | Gene :                                  |  |                      |                   |
| (i       | NM 054046     | Def8                                    | differentially expressed in FDCP 8   | signaling (receptor) | prefrontal cortex |
|          | NIM CODEDO    | <b>*</b>                                | McLeod syndrome gene homolog   | transport            | prefrontal cortex |
|          | NIM OCCODE    | Sep Sep Sep Sep Sep Sep Sep Sep Sep Sep | solute carrier family  | transport            | prefrontal cortex |
|          | NIM_044478    | 0,000                                   |  | cell adh             | prefrontal cortex |
|          | 07110_MM      | 100                                     |  | transport            | prefrontal cortex |
|          | NM_026413     | 50000                                   |  |                      | votroe leteration |
|          | NM 026413     | Slco6b1                                 | solute carrier organic anion transporter family, member 6b1  | transport            | premornal correx  |
|          | NIM COOKED    |   |  | signaling (receptor) | prefrontal cortex |
|          | DOTO TO TO TO |   | BIKEN ADNA 2810031111 GRUB   | unknown (receptor)   | Hypothalamus      |
|          | AK01284/      |   |  | leased and           | U.molodiodomio    |
|          | NM 007583     | Cacng2                                  | calcium channel, voltage-dependent, gamma subunit 2  | lon channel          | Typou manaring    |
|          | DBGQAQ        | Pivna                                   | plexin A2  | signaling (receptor) | Midbrain          |
|          | 2002          | 1                                       | 200  | protein degradation  | Midbrain          |
|          | NM_010781     | Mcpt6                                   | וומצו כפון לוסופמים ס  |                      | i cide            |
|          | NM 009730     | Atm                                     | attractin  | cell adn (receptor)  | MIODIANI          |
|          | A TOOOT A     | 60                                      | insulin receptor substrate 2   | signaling (receptor) | Midbrain          |
|          | AL030/30      | 7611                                    |  | transport            | Midbrain          |
|          | NM 028122     | Sic14a1                                 | Solde carrier lamily 14 (wea naisprover), memory   |                      |                   |
|          |               | •                                       |  | espouse lemmul       |                   |
|          | N42A172       | 2                                       | complement receptor related protein  | (receptor)           | Midbrain          |
|          | AVOOTEBB      | ;                                       | RIKEN cDNA 1200003006 gene   | transport            | Midbrain          |
|          | ANO04200      |   |  | signaling (receptor) | Midbrain          |
|          | U22015        | Rxip110                                 | retinoid X receptor interacting protein 110  | A Land Brown Bio     |                   |

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|               |          | . Actions ellelement -  | Signating (receptor) | prefrontal cortex  |
|---------------|----------|---|----------------------|--|
| NM_010148     | Epor     | erytriopotetin receptor   |                      | votroe leterature  |
| MM 019967     | Dbccr1   | deleted in bladder cancer chromosome region candidate 1 (human)         | HISC                 | preiroillai coitea   |
| MM 021543     | Podh8    | protocadherin 8   | cell adh             | prefrontal cortex  |
| NM 011012     | Ē        | oploid receptor-like  | signaling (receptor) | prefrontal cortex  |
| 21010 July    | i do     | protessium voltage-gated channel. Isk-related subfamily, member 1       | ion channel          | prefrontal cortex  |
| NIM_000424    | I PORT   | C distract consultation in lands  | transport            | prefrontal cortex  |
| AF083876      | Emp2     | ביים ביים ביים ביים ביים ביים ביים ביים                                 |                      | arntrantal cortox  |
| NM 021550     |          | RIKEN cDNA 1500002/11 gene  | MISC                 | bleiloilai coita   |
| NM 013596     | Mo5r     | melanocortin 5 receptor   | signaling (receptor) | prefrontal cortex  |
| NM 007936     | Fnha4    | Eph receptor A4   | signaling (receptor) | Hypothalamus   |
| NIM COUZE     | Kening   | Kv charmel-interacting protein 2  | lon channel          | Hypothalamus   |
| NW_000710     | المالية  | calcitonin nane-related peotide-receptor component protein              | signaling (receptor) | Hypothalamus   |
| ININ COOL FOR | 3 .      | Cultactino  | cell adh             | Hypothalamus   |
| X81365        | Satus    |   | 100000               | Hynothalamus   |
| NM 019799     | Rhog     | Rhesus blood group-associated C glycoprotein                            |                      | onimination in   |
| AIM OURTRY    | Š        | neuropilin  | cell adh             | Hypothalamus   |
| 100000        | L        | BIKEN cDNA 0610009003 gene  | Transport            | Midbrain   |
| NIM_UZDOĐO    |          | EINEN CONA 1700019816 DELE  | signaling (receptor) | Midbrain   |
| AK006107      |          | M and topon contract and a second second                                | signaling (receptor) | Midbrain   |
| NM_008984     | Ptprm    | protein tyricalite priceptionary recognic ypolini                       | fransnort            | Midbrain   |
| NM_008135     | Slc6a9   | solute carrier family 6 (neurotransminer datispolete, gryoney, member 3 | unouqui              | Midbrain   |
| AK012535      | A1256456 | expressed sequence Al256456   | Carting Control      | Midhrain   |
| MM 041201     | Phn1     | protein tyrosine phosphatase, non-receptor type 1                       | signating (receptor) | THE POPULAR IN THE PO |

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Page 1 of

| Accession  | Gene                             | Region                      | Tunior | Типе  | Ratio          | pyalue<br>array | Retio<br>real lime | pvølue<br>red line | Validated         |
|------------|----------------------------------|-----------------------------|--------|-------|----------------|-----------------|--------------------|--------------------|-------------------|
|            |                                  |                             |        | 18    | -0.172 ± 0.020 | 0.014           | -0.053 ± 0.284     | 0.870              | No                |
| AK004714   | RIKEN cDNA<br>1200011M11         | Hypothalamus                | Breast | 72    | -0.239 ± 0.076 | 0.048           | -0.226 ± 0.103     | 0.004              | Yes               |
|            | gene                             |                             |        | 192   | 0.002 ± 0.052  | 0.969           | -0.137 ± 0.277     | 0.669              |                   |
|            |                                  |                             | •      | , 18  | 0.141 ± 0.023  | 0.003           | 0.013 ± 0.242      | 1960               | <u>8</u>          |
| NM_007591  | calreticulin                     | Hypothalamus.               | Breast | 72    | 0.181 ± 0.105  | 0.226           | -0.153 ± 0.231     | 0.577              |                   |
|            |                                  |                             |        | 192   | 0.085 ± 0.026  | 0.048           | <del>Q</del>       | <del>Q</del>       |                   |
|            |                                  |                             |        |       | -0.140 ± 0.006 | 0.029           | -0.488 ± 0.191     | 0.017              | Yes               |
| NM_011622  | target of myb1                   | target of myb1 Hypothalamus | Breast | 27    | -0.218±0.017   | 0.049           | -0.278 ± 0.182     | 0.006              | Yes               |
|            | Populari<br>Populari<br>Populari |                             |        | 192   | 0.003 ± 0.003  | 0.376           | 9                  | Q.                 |                   |
|            |                                  |                             |        | 18    | 0.001          | QN              | Q                  | 2                  |                   |
| NIM 019645 | outer dense fiber                | of Hypothalamus             | Breast | 72    | -0.177 ± 0.031 | 0.010           | 0.183 ± 0.133      | 0.302              | No.               |
|            | of sperm tails 2                 |                             |        | 192   | -0.139±0.046   | 0.092           | Q.                 | 9                  |                   |
|            |                                  |                             |        | 8     | 0.073 ± 0.020  | 0.035           | 0.386 ± 0.263      | 0.040              | , 88 <sub>4</sub> |
| NM_011202  | protein syrosine<br>phosphatase, | Hypothalamus                | Lung   | 27    | -0.018±0.016   | 0.395           | -0.562 ± 0.592     | 0.271              |                   |
|            | type 11                          |                             |        | 192   | -0.015±0.015   | 0.427           | Q                  | 9                  |                   |
|            |                                  |                             |        | 8     | -0.030 ± 0.005 | 0.023           | 8                  | 9                  |                   |
| NIM_027722 | HIKEN 6DNA<br>4933436C10         | Hypothalamus                | Lung   | . 22  | -0.052 ± 0.015 | 0.043           | $0.069 \pm 0.236$  | 0.826              | S.                |
|            | gene                             |                             |        | . 192 | ND             | ND<br>Q         | Q.                 |                    |                   |
|            |                                  |                             |        | 18    | 0.234 ± 0.003  | 600.0           | 0.491 ± 0.314      | 950'0              | Yes               |
| X81385     | contactin 2                      | Hypothalamus                | Lung   | 27    | 0.046 ± 0.026  | 0.221           | -0.068 ± 0.137     | 0.706              |                   |
|            |                                  |                             |        | 192   | -0.046 ± 0.069 | 0.627           | Q                  |                    |                   |

Figure 49 Page 2 of 3

|           | ,                                     |                          |          | 8              | $0.147 \pm 0.050$  | 0.100 | 0.113 ± 0.164     | 0.628   |     |
|-----------|---------------------------------------|--------------------------|----------|----------------|--------------------|-------|-------------------|---------|-----|
| AF408435  | protein regulator<br>of cytokinesis 1 | Midbrain                 | Breast   | 72             | 0.156 ± 0.031      | 0.037 | 0.269 ± 0.150     | 0.215   | ₽.  |
|           |                                       |                          |          | 192            | 0.120 ± 0.110      | 0.473 | Q.                | Q.      |     |
|           |                                       |                          |          | 18             | $-0.502 \pm 0.051$ | 0.010 | 0.162 ± 0.193     | 0.448   | 2   |
| AK003524  | 1110007C02                            | Midbrain                 | Breast   | 72             | -0.038             | QN    | -0.162 ± 0.239    | . 895.0 |     |
|           | gene                                  |                          |          | 192            | $0.277 \pm 0.002$  | 0.003 | QN                | QN      |     |
|           | growth arrest                         |                          |          | , <del>8</del> | -0.149 ± 0.013     | 0.008 | 0.159 ± 0.242     | 0.546   | ક્ર |
| NM_007836 | damage                                | Midbrain                 | Breast   | 72             | -0.201             | Q     | 0.245 ± 0.113     | 0.163   |     |
|           | inducione 45<br>alpha                 |                          |          | 192            | 0.029              | 9     | Q                 | Q.      |     |
|           | protein                               |                          |          | 18             | -0.109 ± 0.027     | 0.153 | -0.080 ± 0.112    | 0.612   |     |
| NM_008889 | phosphatase 1, regulatory             | Midbrain                 | Breast   | . 22           | -0.185±0.005       | 0.018 | -0.039 ± 0.299    | 0.907   | 2   |
|           | (inhibitor)<br>subunit 14B            |                          |          | 192            | -0.025 ± 0.042     | 0.690 | Q.                | ND<br>Q |     |
|           | Trof and Inf                          |                          |          | 18             | -0.120 ± 0.004     | 0.023 | 0.237 ± 0.228     | 0.357   | 2   |
| NM_019551 | receptor                              | Midbrain                 | Breast   | 72             | -0.138 ± 0.050     | 0.226 | $0.270 \pm 0.398$ | 0.567   |     |
|           | protein                               |                          |          | 192            | -0.144 ± 0.023     | 0.026 | -0.177 ± 0.309    | 0.626   | Š   |
|           |                                       |                          |          | 8              | -0.052 ± 0.082     | 0.593 | 9                 | 2       |     |
| AK009856  | RIKEN cDNA<br>2310046M24              | Prefrontal cortex Breast | k Breast | 72             | $0.113 \pm 0.081$  | 0.296 | 0.488 ± 0.364     | 0.116   |     |
|           | gene                                  |                          |          | 192            | 0.163 ± 0.0003     | 0.001 | -0.277 ± 0.282    | 0.141   | 2   |
|           |                                       |                          |          | 81             | 0.217 ± 0.082      | 0.078 | 0.092 ± 0.055     | 0.193   |     |
| NM_009717 | neurogenic<br>differentiation 6       | Prefrontal cortex Lung   | c Lung   | . 22           | 0.098 ± 0.018      | 0.033 | 0.023 ± 0.145     | 0.884   | 8   |
|           |                                       |                          |          | 192            | -0.026 ± 0.018     | 0.245 | 8                 | 9       |     |

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|                      | 470000 L 00170009     |
| AB020542             | 170938 LOC170938      |
| AB035381             | 170759 Cgi152         |
| AB039933             | 70335 Dp1i1           |
| AB041586             | 76454                 |
| AB049650             | 75398 Mrpl32          |
| AB056100             | 66902 Mtap            |
| AF039839             |                       |
| AF059175             | 13867 Erbb3           |
| AF061934             | 50782 Rgs11           |
| AF140708             | 21462 Tcp10c          |
| AF168680             | 50766 Crim1           |
| AF179996             | 20362 Sept8           |
| AF193608             | 60364 Donson          |
| AF201662             | 17202 Mc4r            |
| AF224264             | 233908 Fus            |
| AF229644             | 54646 DXImx48e        |
| AF276974             | 192201                |
| AF282272             | 258740 MOR171-12      |
| AF282304             | 258276 MOR224-12      |
| AF296075             | 81896 Wdr10           |
| AF303106             | 110012 Gtrgeo22       |
| AF317517             | <b>77889</b>          |
| AF326960             | 21380 Tbx1            |
| AF342737             | 67378 Bbs2            |
| AF343581             | 72322 Xpo5            |
| AF369902             | 68291 Mto1            |
| AF411834             | 20620 Snk             |
| AF440737             | 69362                 |
| AF448804             | 72162 Dhx36           |
| AJ007376             | 26900 Ddx3y           |
| AJ133536             | 20955 Sybl1           |
| AJ223782             | 235072 Sept7          |
| AJ246002             | 50850 Spg4            |
| AJ252147             | 66413                 |
| AJ308965             | 101739 Psip2          |
| AJ400622             | 230157 Tmeff1         |
| AK002252             | 68323                 |
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| AK002704             | 68365 Rab14           |
| AK002757             | 56282 Mrpl12          |
| AK002737<br>AK002842 | 68386                 |
| AK003004             | 18111 Nnat            |
| AK003004<br>AK003132 | 75406 Ndufs7          |
| AK003132<br>AK003209 | 75725                 |
|                      | 68576                 |
| AK003358             | 74319                 |
| AK003450             | 74319                 |
| AK003542             |                       |
| AK003571             | 68507 Ppfia4<br>76308 |
| AK003609 ·           | 70300                 |

Figure 50-1

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97541 Qars
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                     74777
                     76295 Atp11b
AK003820
AK004041
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AK004090
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AK005230
AK005314
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                      76507 Abp1 <sup>7</sup>
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|                      |                  |
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| AK014327             | 244672           |
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| AK014396             | 74020 Cpne4      |
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| AK014610             | 74352            |
| AK014652             | 74574            |
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 AK018573
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 AK019095
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 AK019458
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|                      | 68259                  |
| AK019542             |                        |
| AK019549             | 68187                  |
| AK019589             | 78109                  |
| AK019600             | 78795                  |
| AK019665             | 78174                  |
| AK019809             | 78051                  |
| AK019863             | 77634                  |
| AK019878             | 78935                  |
| AK019886             | 68151                  |
| AK019915             | 78271                  |
|                      | 70255·                 |
| AK019934             |                        |
| AK019985             | 77521                  |
| AK020104             | 77733                  |
| AK020492             | 77305                  |
| AK020724             | 77578 Bcl9             |
| AK021021             | 16423 Cd47             |
| AK021076             | 67287                  |
| AK021099             | 77462                  |
| AK021208             | 77422 .                |
| AK021227             | 78531                  |
| AL078630             |                        |
| AY044265             | 235339 Diat .          |
| BC002198             | 102334 Ankrd10         |
|                      | 211556 BC002199        |
| BC002199             |                        |
| BC002226             | 170833 Hook2           |
| BC002231             | 67134 Nol5a            |
| BC002298             | 19283 Ptprz1           |
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| BC003479             | 216820                 |
| BC003843             | 70356 St13             |
| BC003901             | 107951 Cdk9            |
| BC003914             | 58875                  |
| BC003932             | 67278                  |
| BC003957             | 78408                  |
| BC003988             | 83486 Rbm5             |
| BC003988<br>BC004020 | 11603 Agm              |
|                      | 98432 Al836256         |
| BC004581             | 97064                  |
| BC004640             |                        |
| BC004653             | 67155                  |
| BC004690             | 216274 BC004690        |
| BC004739             | 213211 Rnf26           |
| BC004766             | 71799 Ptcd1            |
| BC004771             |                        |
| BC004831             | 228608 Smox            |
| BC005568             | 75689                  |
| BC005598             | ·98221 Ga17            |
| BC005658             | 69957 Cdc16            |
| BC005659             | 171388 Bnipl           |
|                      | 230784 Sesn2           |
| BC005672             | 72144 Slc37a3          |
| BC005744             | 72144 5165783<br>70579 |
| BC005786             |                        |
| BC005792             | 170789 Pte1            |
| BC006834             | 12226 Btg1             |
| BC008101             | 68939                  |
|                      |                        |

Figure 50-5

PCT/US2004/021543

| BC009141      | . 75062 St3a3  |
|---------------|----------------|
|               |                |
| BC011091      | 109815 H47     |
| BC012975      | 14526 Gcg      |
| BC013502      | 217353 Tmc6    |
| BC016080      | 103963 Rpn1    |
| BC016210      | 67017          |
| BC016398      | 19079 Prkab1   |
| BC016616      | 76022          |
| BC017625      | 68047          |
|               |                |
| BC018220      | 69190          |
| D50060        | 18553 Pace4    |
| D50872        | 19204 Ptafr    |
| D83203        | 19271 Ptprj    |
| K02138        |                |
| L17305        |                |
| M60510        | 83796 Smarcd2  |
| NM_007377     | 11302 Aatk     |
|               |                |
| NM_007393     | 11461 Actb     |
| NM_007440     | 11684 Alox12   |
| NM_007474     | 11833 Aqp8     |
| NM_007502     | 11933 Atp1b3   |
| NM_007531 .   | 12034 Bcap37   |
| NM_007564 .   | 12192 Zfp36l1  |
| NM_007581     | 12297 Cacnb3   |
| NM_007583     | 12300 Cacng2   |
| NM_007600     | 12333 Capn1    |
|               |                |
| NM_007618     | 12401 Serpina6 |
| NM_007622     | 12412 Cbx1     |
| NM_007624     | . 12417 Cbx3   |
| NM_007668     | 12568 Cdk5     |
| NM_007674     | 12592 Cdx4     |
| NM_007688     | 12632 Cfl2     |
| NM_007693     | 12652 Chga     |
| NM_007709     | 12705 Cited1   |
| NM_007728     | 12810 Coch     |
| NM_007828     | 13144 Dapk3    |
|               |                |
| NM_007841     | 13209 Ddx6     |
| NM_007862     | 13383 Dlgh1    |
| NM_007868     | 13405 Dmd      |
| NM_007898 .   | 13595 Ebp      |
| NM_007899     | 13601 Ecm1     |
| NM_007922     | 13712 Elk1     |
| NM_007933     | 13808 Eno3     |
| NM_007980     | 14079 Fabp2    |
| NM_008014     | 14208 Ppm1g    |
| NM_008015     | 14209 Fin14    |
|               |                |
| NM_008033     | 14272 Fnta     |
| NM_008072     | 14403 Gabrd    |
| NM_008076     | 14409 Gabrr2   |
| NM_008091     | 14462 Gata3    |
| NM_008113     | 14570 Arhgdig  |
| NM_008115     | 14586 Gfra2    |
| NM_008133     | 14661 Glud     |
| NM_008138     | 14678 Gnai2    |
| NM_008142     | 14688 Gnb1     |
| NM_008160     |                |
| IAIM_OOR I PO | 14775 Gpx1     |
|               |                |

| VM_008161 | 14778 Gpx3     |
|-----------|----------------|
| VM_008226 | 15166 Hcn2     |
| VM_008230 | 15186 Hdc      |
| NM_008233 | 15193 Hdgfrp2  |
| NM_008297 | 15500 Hsf2     |
| NM_008301 | 15512 Hspa2    |
| NM_008307 | 15547 Htf9c    |
| NM_008350 | 16156 II11     |
| NM_008358 | 16169   15ra   |
| NM_008403 | 16413 itgb1bp1 |
| NM_008418 | 16491 Kcna3    |
| =         | 16594 Klc2     |
| NM_008451 | 17160 Man2b2   |
| NM_008550 | 26408 Map3k5   |
| NM_008580 | 17294 Mest     |
| NM_008590 | 17385 Mmp11    |
| NM_008606 | 18107 Nmt1     |
| NM_008707 | 18125 Nos1     |
| NM_008712 | 18175 Nrap     |
| NM_008733 | •              |
| NM_008744 | 18208 Ntn1     |
| NM_008761 | 18301 Fxyd5    |
| NM_008771 | 18436 P2rx1    |
| MW_008797 | 10003 PCX      |
| NM_008858 | 18760 Prkcm    |
| NM_008871 | 18787 Serpine1 |
| NM_008896 | 330260 Pon2    |
| NM_008915 | 19057 Ppp3cc   |
| NM_008920 | 19074 Prg2     |
| NM_008946 | 19175 Psmb6    |
| NM_008974 | 19244 Ptp4a2   |
| NM_008990 | 19294 Pvrl2    |
| NM_009011 | 19359 Rad23b   |
| NM_009020 | 19374 Rag2     |
| NM_009025 | . 19414 Rasa3  |
| NM_009029 | 19645 Rb1      |
| NM_009046 | 19698 Relb     |
| NM_009055 | 19724 Rfx1     |
| NM_009069 | 19769 Rlt1     |
| NM_009070 | 19826 Rnps1    |
| NM_009104 | 20135 Rm2      |
| NM_009106 | 20166 Rtkn     |
| NM_009130 | 20255 Scg3     |
| NM_009136 | 20284 Scrg1    |
| NM_009255 | 20720 Serpine2 |
| NM_009261 | 20744 Spnr     |
| NM_009273 | 20813 Srp14    |
| NM_009276 | 20819 Srst     |
| NM_009282 | 20842 Stag1    |
| NM_009320 | 21366 Slc6a6   |
| NM_009357 | 21766 Tex261   |
| NM_009460 | 22218 Ubl1     |
| NM_009467 | 22238 Ugt2b5   |
| NM_009472 | 22253 Unc5c    |
| NM_009503 | 269523 Vcp     |
| NM_009539 | 22637 Zap70    |
| NM_009551 | 22682 Zfp216   |
|           | •              |

Figure 50-7

| NM_009582              | 26404 Map3k12              |
|------------------------|----------------------------|
| NM_009624              | 11515 Adcy9                |
| NM_009688              | 11798 Birc4                |
| NM_009707              | 11856 Arhgap6              |
| NM 009732              | 11998 Avp                  |
| NM_009748              | 12068 Bet1                 |
| NM_009806              | 12361 Cask                 |
| NM_009831              | 12450 Ccng1                |
| NM_009846              | 12484 Cd24a                |
| NM_009848              | 12495 Entpd1               |
| NM_009881              | 12593 Cdyl                 |
| NM_009895              | 12700 Cish                 |
| NM_009950              | 12905 Cradd                |
| NM_010073              | 13481 Dpm2                 |
| NM_010101              | 13610 Edg3                 |
| NM_010195              | 14160 Gpr49                |
| NM_010243              | 14348 Fut9                 |
| NM_010254              | 14428 Galr2                |
| NM_010255              | 14431 Gamt                 |
| NM_010313              | 14697 Gnb5                 |
| NM_010358              | 14862 Gstm1                |
| NM_010362 .            | 14873 Gsto1                |
| NM_010417              | 15203 Heph                 |
| NM_010509              | 15976 Ifnar2               |
| NM_010577              | 16402 ltga5<br>16530 Kcnk7 |
| NM_010609              | 16601 Bteb1                |
| NM_010638<br>NM_010710 | 16870 Lhx2                 |
| _                      | 17319 Mif                  |
| NM_010798<br>NM_010799 | 17339 Minpp1               |
| NM_010793              | 18041 Nfs1                 |
| NM_010934              | 18166 Npy1r                |
| NM_010950              | 18223 Numbl                |
| NM_011012              | 18389 Oprl                 |
| NM 011018              | 18412 Sqstm1               |
| NM_011021              | 18420 Otp                  |
| NM_011025              | 18429 Oxt                  |
| NM_011051              | 18570 Pdcd6                |
| NM_011126              | 18843 Plunc                |
| NM_011154              |                            |
| NM_011177              | 19144 Prss18               |
| NM_011192              | 19192 Psme3                |
| NM_011251              | 19654 Rbm6                 |
| NM_011256              | 19679 Rdgb2                |
| NM_011334              | 12727 Clcn4-2              |
| NM_011522              | 20974 Syngr3               |
| NM_011601              | 21893 Tlm                  |
| NM_011643              | 22063 Trpc1                |
| NM_011791              | 23808 Ash2l                |
| NM_011804              |                            |
| NM_011828              | 23908 Hs2st1               |
| NM_011855              | 23963 Odz1                 |
| NM_011870              | 23991 Cib1                 |
| NM_011908              | 24109 Ubi3                 |
| NM_011921              | 26358 Aldh1a7              |
| NM_011949              | 26413 Mapk1                |

Figure 50-8

| NM_011961          | 26432 Plod2               |
|--------------------|---------------------------|
| NM_011962          | 26433 Plod3               |
| NM_011990          | 26570 Slc7a11             |
| NM_012019          | 26926 Pdcd8               |
| NM_012045          | 26971 Pla2g2f             |
| NM_012048          | 27015 Polk                |
| NM_013556          | 15452 Hprt                |
| NM_013596          | 17203 Mc5r                |
|                    | 18263 Odc                 |
| NM_013614          | 18472 Pafah1b1            |
| NM_013625          | 19216 Ptger1              |
| NM_013641          | 27224 Tceb3               |
| NM_013736          | 27356 Insl6               |
| NM_013754          | 27361 Sepr                |
| NM_013759          | 27301 Sept<br>27414 Gnefr |
| NM_013789          | 22365 Vps45               |
| NM_013841          | •                         |
| NM_013867          | 29815 Boar3               |
| NM_013909          | 30840 Fbxl6               |
| NM_013916          | 30929 AL022832            |
| NM_013932          | 30959 Ddx25               |
| NM_015762          | 50493 Txnrd1              |
| NM_015830          | 30017 0011                |
| NM_016664          | 50994 Mata2               |
| NM_016692          | 16319 Incenp              |
| NM_016703          | 50907 Preb                |
| NM_016719          | 50915 Grb14               |
| NM_016737          | 20867 Stip1               |
| NM_016750          | 51788 H2afz               |
| NM_016769          | 17127 Madh3               |
| NM_016778          | 51800 Bok                 |
| NM_016806          | 53379 Hnrpa2b1            |
| NM_016909          | 53424 Tsnax               |
| NM_016910          | 53892 Ppm1d               |
| NM_017379          | 53857 Tuba8               |
| NM_017395          | 53970 Rfx5                |
| NM_018731          | 11944 Аф4а                |
| NM_018733          | 20265 Scn1a               |
| NM_018734          | 55932 Gbp3                |
| NM_018743          | 102247 AU041707           |
| NM_018755          | 54381                     |
| NM_018761          | 54366 Catnal1             |
| NM_018772          | 55950 Bri3                |
| NM_018798          | 54609 Ubqln2              |
| NM_018808          | 81489 Dnajb1              |
| NM_018851          | 56045 Samhd1              |
| NM_018879          | 56032 Tusc4               |
| NM_019409          | 18377 Omg                 |
| NM_019435          | 104130 Np15               |
| NM_019501          | 56075                     |
| NM_019505          | 56077 Dgke                |
| NM_019518          | 56149 Grasp               |
| NM 019537          | 56088 Dscr2               |
| NM_019571          | 56224 Tm4sf9              |
| NM_019587          | 140571 Plxnb3             |
| NM_019629          | 56290 Prp15               |
| NM_019631          | 56277                     |
| . 11.1_0 1 0 0 0 1 |                           |

Figure 50-9

```
NM_019635
                     56274 Stk3
                     22190 Ubc
NM_019639
                     56306 Tera
NM_019643
                     56307 Metap2
NM_019648
                     56457 Clptm1
NM_019649
                     56379 Kcnj1
NM_019659
                     56309 Mycbp
NM_019660
                     22209 Ube2a
NM_019668
NM_019676
                     18799 Plcd
NM_019691
                     14802 Gria4
                     56365 Clcnk11
NM_019701
                     56421 Pfkp
NM_019703
                     21888 Tle4
NM 019714
                     56426 Pdcd10
NM_019745
                     56397 Morf4l2
NM 019768
                     56372
NM_019772
                     56382 Rab9
NM_019773
                      56463 AL033314
NM_019776
                      56321 Aatf
NM_019816
                      56412
 NM_019836
                      56258 Hnrph2
 NM_019868
                      56697 Akap10
NM_019921
                      56529
 NM_019951
                      56745 C1qtnf1
 NM_019959
                      56795 Arm1
 NM_019968
                      56715 Rabgef1
 NM_019983
 NM_020006
                      56699 Cdc42ep4
                      24075 Taf10
 NM_020024
                      56786
 NM_020050
                      57316 C1d
 NM_020558
                      57321 Terf2ip
 NM_020584
                      78593 Nrip3
 NM_020610
                      21340 Taf1b
 NM_020614
                      57373 ICRFP703B1614Q5.6
 NM_020616
                      57377 Gcs1
 NM_020619
                      57391
 NM_020624
                      57754
  NM_021316
                      14652 Glp1r
  NM_021332
                     140904 Caln1
  NM_021371
                       58217 Trem1
  NM_021406
                       16889 Lip1
  NM_021460
                       58869 Pex2
  NM_021483
                       58992 F12
  NM_021489
                       59007 Ngly1
  NM_021504
                       17169 Mark3
  NM_021516
                       59021 Rab2
  NM_021518
                       59033 Slc4a8
  NM_021530
                       59047 Pnkp
  NM_021549
                       59092 Pcbp4
  NM_021567
  NM_022321
                       64099 Parvg
                       65106 Arl6ip5
  NM_022992
                       66163 Mrpl4
  NM_023167
                       66233 Dmap1
  NM_023178
                       66237 Atp6v1g2
  NM_023179
                       66471 Anp32e
  NM_023210
```

Figure 50-10

```
NM_023450
                    68355
NM_023500
                    22439 Xkh
NM_023516
                    69573
NM_023587
                    70757 Ptplb
NM_023633
                    71952
NM_023697
                   105014 Rdh14
                    76257 Slc38a3
NM_023805
                    76681 Trim12
NM_023835
                    67295 Rab3c
NM_023852
NM_023884
                    78255
                     67057 Yaf2
NM_024189
NM_024197
                    67273 Ndufa10
                     67433
NM_024201
NM_024244
                     71721
                     69253 Hspb2
NM_024441
                    209683 Al428795
NM_024477
                     79565 BC002286
NM_024479
                     13180 Pcbd
NM_025273
NM_025310
                     56095 Epcs3
NM_025335
                     66074
                     66154 .
NM_025387
                     66191
NM_025409
NM_025415
                     66197 Cks2
NM 025449
                     66257 Nicn1
NM_025450
                     66258 Mrps17
NM_025596
                     66494
NM_025683
                     66646 Rpe
NM_025718
                     66705 Dnase1I2
                     66834 Them2
 NM_025790
 NM_025822
                     66880
                     66885 Acadsb
 NM_025826
 NM_025835
                     66904 Pccb
 NM_025876
                     66971 Cdk5rap1
 NM_025983 -
                     67126 Atp5e
 NM_026040
                     67222
 NM_026065
                     67270
 NM_026096
                     67334
 NM_026107
                     52712 D11Ertd714e
 NM_026162
                     67448 Plxdc2
 NM_026187
                     52231 D1Ertd161e
 NM_026306
                     67674
 NM_026309
                      67678 Lsm3
 NM_026401
                      67840 Mrp63
 NM_026411
                      67851
 NM_026417
                      67864
 NM_026423
                      67873
 NM_026435
                      67890
 NM_026487
                      67979
 NM_026518
                      68031
 NM_026551
                      68087
  NM_026559
                      52700 D11Ertd672e
  NM_026819
                      52585 Dhrs1
                      14057 Sfxn1
  NM_027324
  NM_029478
                      75909
                      80284 BC003266
  NM_030252
  NM_030262
                      80294
```

Figure 50-11

| NM_030558 | · 80733 Car15                  |
|-----------|--------------------------------|
| NM_030611 | 83702 Akr1c6                   |
| NM_030708 | 80892                          |
| NM_030719 | 80909 Gats                     |
| NM_030880 | 80708 Pacsin3                  |
| NM_031184 | 83396 Gli5                     |
| NM_031877 | 83767 Wasf1                    |
| NM_033327 | 94187 Ebfaz                    |
| NM_033370 | 70349 Copb1<br>116891 BC005682 |
| NM_033562 | 116891 BC005682                |
| NM_033568 | 27681 D11Moh34                 |
| NM_053105 | . 93688 Klhl1                  |
| NM_053183 | 94213 Ddx50                    |
| NM_053193 | 94230 Cpsf1                    |
| NM_053271 | . 116838 Rims2                 |
| NM_080289 | 76238 Grhpr                    |
| U51279    | 12048 Bcl2l                    |
| U53591    | 14112 Fau-ps3                  |
| U69136    | 12565 Cdh9                     |
| U70033    | 20541 Slc8a1                   |
| X16301    |                                |
| X17647    | 18212 Ntrk2                    |
| X54327    | 107508 Eprs                    |
| X66323 ·  | 22596 Xrcc5                    |
| Y11717    | 15400 Hoxa3                    |
| Y12713    | 27282 Erv4                     |
| Y17852    | 14548 Gdap3                    |
|           |                                |



Figure 5# A

|          | ACCESS               | LOCUS            | GENE        | LOCALIZATION   | BIOLOGICAL FUNCTION             |
|----------|----------------------|------------------|-------------|--|---------------------------------|
|          | AK013995             | 73078            |             | mitochondrion  | misc                            |
|          | AK008537             | 67035            |             | cytoplasm  | translation                     |
|          | NM_019773            | 56382            | Rab9        | Golgi apparatus  | transport                       |
|          | AK013965             | 68969            |             | cytoplasm  | translation                     |
| 1        | NM_026559            | 52700            | D11Ertd672e |  | transport                       |
|          | NM_019518            | 56149            | Grasp       | cytoplasm; perinuclear space; plas   | signaling                       |
|          | NM_023587            | 70757            | Ptplb       | . extracellular, integral to membra  | signaling?                      |
|          | NM_007440            | 11684            | Alox12      | plasma membrane  | lipid metabolism                |
|          | AK011853             | 72475            | Ssbp3       | nucleus  | transcription                   |
|          | NM_008297            | 15500            | Hsf2        | cytoplas m;nucleus;polytene chrom  | transcription                   |
|          | AK018254             | 50758            | Fbxo13      |  | unknown                         |
|          | AK011862             | 28018            | D7Wsu128e   |  | protein degradation ?           |
|          | NM_021549            | 59047            | Pnkp        | telomere   | misc                            |
| 230      | AK012843             | 72668            |             |  | traffic                         |
|          | NM_030558            | 80733            | Car15       |  | metabolism                      |
|          | AK019458             | 70122            | MIR3        | transcription factor TFIIF compl   | tumor related                   |
| · • ·    | NM_023852            |                  | Rab3c       | synaptic vesicle   | transport                       |
|          | AK021021             | 16423            | C d47       | Integral to plasma membrane  | cell adh - signaling (receptor) |
|          | NM_025826            |                  | Acadsb      | mitochondrion  | metabolism                      |
| :: -     | NM_025387            |                  |             | integral to membrane   | unknown                         |
|          | NM_013916            |                  | AL022832    |  | unknown                         |
| ن فقا    | AF 168680            | 50766            | Crim1       | extracellular  | growth factor                   |
| _        | D50060               | 18553            | Pace4       | membrane   | signaling (receptor)            |
|          | AK017798             | 70676            |             | A CONTRACTOR OF THE PARTY OF TH | signaling                       |
|          | NM_007377            |                  | Aatk        | Integral to membrane   | apoptosis                       |
|          | € NM_00905           |                  | R fx1       | Intermediate filament nucleus  | transcription                   |
|          | : AK013604           | 72880            |             |  | unknown                         |
| -        | ≱ AF061934           | 50782            | Rgs11       | heterotrimeric G-protein complex   | signaling                       |
|          | NM_02540             |                  |             | extracellular space;Integral to  | unknown                         |
|          | NM_01035             |                  | Gstm1       | cytoplasm  | metabolism                      |
|          | NM_00904             |                  | Relb        | transcription factor complex   | transcription                   |
|          | AK011531             | 67788            |             |  | unknown                         |
|          | NM_02232             |                  | Parvg       | cytoskeleton   | celi adh                        |
|          | AK017493             | 67974            | No15        | cytoplasm<br>Integral to membrane; mitochondri   | cell cycle                      |
| 444      |                      |                  | Np15        | integral to membrane;millionidit   | unknown                         |
|          | AK009163             | 76730            | Hnrph2      | nucleus;ribonucleoprotein comple   | unknown<br>traffic              |
| a        | NM_01986             |                  | Thispite    | cytoplasm  | transcription?                  |
| 35.0     | AK012852             | 67197            | Trpc1       | integral to plasma membrane  | signaling (receptor)            |
|          | NM_01164<br>AF059175 | 3 22063<br>13867 | Erbb3       | integral to membrane; intracellul  | signaling (receptor)            |
|          |                      |                  | Numbl       | cytoplasm  | mbc                             |
| ته اسباط | NM_01095             |                  | Cdyl        | chromatin;nucleus  | celi cycle                      |
| and a    | AK019915             |                  | ouj.        | an on the order to order   | unknown                         |
| 1.00     | AB056100             |                  | Mtap        |  | misc                            |
| nada la  | U69136               | 12565            | Cdh9        | Integral to membrane   | cell adh                        |
| مراق د   | AK016792             |                  |             | g  | unknown                         |
| 1        | AK012740             |                  |             | integral to membrane   | unknown                         |
| 111      | AF 282272            |                  |             | Integral to membrane   | signaling                       |
| 1, 1     | AK013276             |                  |             | membrane   | signaling (receptor)            |
|          | NM_0244              |                  |             | cytosol  | translation                     |
| #. T •   | NM_0167              |                  |             | nucleosome; nucleus  | cell cycle                      |
|          | NM_0234              |                  |             | integral to membrane   | unknown                         |
| '        | NM_0137              |                  |             | extracellular space  | growth factor                   |
| 1        | AK00462              |                  |             | <del></del>  | unknown                         |
| T-4. 201 | NM_0139              |                  |             |  | protein degradation             |
| T        | NM_0333              |                  |             | Golgi membrane;Golgi vesicle;cyt   | transport                       |
|          | NM_0080              |                  |             | microtubule;nucleus  | transcription                   |
|          | BC00578              |                  |             | ***  | unknown                         |
| $\vdash$ | NM_0200              |                  |             | focal adhesion; transcription fac  | transcription                   |
|          | U51279               | 12048            |             | integral to membrane; mitochondri  | apoptosis                       |
|          |                      |                  |             |  |                                 |



Log<sub>2</sub>(ratio)

# Figure 5 ₽B

|          |                         | 1.00110                    | OFNE                                  |                                    | DIGI COLOLI EULETICA     |
|----------|-------------------------|----------------------------|---------------------------------------|------------------------------------|--------------------------|
|          | ACCESS.                 | LOCUS                      | GENE                                  | LOCALIZATION                       | BIOLOGICAL FUNCTION      |
|          | NM_008142               | 14688                      | Gnb1                                  | heterovimeric G-protein complex    | signaling                |
|          | Y12713                  | 27282                      | Erv4                                  |                                    | virus                    |
|          | NM_021460               | 16889                      | Lip1                                  | extracellular space;lysosome       | Ilpid metabolism         |
|          | NM_025335               | 66074                      |                                       | extracellular matrix               | unknown                  |
| <u></u>  | AK008955                | 70397                      | F-1-0                                 |                                    | unknown                  |
| <u> </u> | NM_007980               | 14079                      | Fabp2                                 | soluble fraction                   | transport                |
|          | BC 003843               | 70356                      | St13                                  | integral to membrane               | meta bolis m             |
| Ç4 .     | AK014396                | 74020                      | Cpne4                                 | mitochondrial inner membrane       | meta bolis m             |
|          | NM_007922               | 13712                      | Eik1                                  | membrane;nucleus                   | transcription            |
|          | AK005230                | 76338                      |                                       | Golgi apparatus; and oplasmic reti | trans port - signaling   |
|          | AK013788                | 73047                      |                                       |                                    | unknown                  |
|          | NM_007622               | 12412                      | Cbx1                                  | centric heterochromatin;nucleopi   | misc                     |
|          | NM_007393               | 11461                      | Actb                                  | cytoskeleton                       | ctsk                     |
|          | NM_007898               | 13595                      | Ebp                                   | endoplasmic reticulum membrane;i   | lipid metabolism         |
|          | NM_016719               | 50915                      | Grb14                                 |                                    | signaling (receptor)     |
|          | NM_007564               | 12192                      | Zfp3611                               | cytoplas m;nucleus                 | transcription            |
| 6F 4     | ₹ AL078630              |                            |                                       |                                    | unknown                  |
| 300      | AK007310                | 76669                      |                                       |                                    | transcription            |
|          | AK020492                | 77305                      |                                       |                                    | transcription            |
|          | AK016714                | 74405                      |                                       |                                    | unknown                  |
|          | NM_013625               | 18472                      | Pafah1b1                              | centrosome;microtubule associate   | lipid metabolism         |
|          | NM_007841               | 13209                      | Ddx6                                  | eukaryotic translation initiatio   | misc                     |
|          | AK003004                | 18111                      | Nnat                                  |                                    | transport                |
| 75       | U70033                  | 20541                      | S lc8a1                               | integral to plasma membrane        | transport                |
| 45 5     | AK014695                | 71633                      |                                       |                                    | unknown                  |
|          | NM_007624               |                            | Срх3                                  | chromatin;nucleus                  | transcription            |
| 130      | NM_018851               |                            | Samhd1                                |                                    | immune response          |
| 3.35     | AK016128                | 75359                      | · · · · · · · · · · · · · · · · · · · |                                    | unknown                  |
|          | AF342737                | 67378                      | Bbs2                                  | integrin complex                   | misc (secreted) ?        |
|          | NM_008606               |                            | Mmp11                                 | extracellular matrix;extracellul   | protein degradation      |
| 10       | NM_018808               |                            | Dnajb1                                | cytoplasm                          | translation              |
| 4        | AF 369902               | 68291                      | Mto1                                  | mitochondrion                      | metabolism               |
| 19.5     | NM_01673                |                            | Stip1                                 | Golgi apparatus; nucleus           | misc                     |
|          | AF411834                | 20620                      | Snk                                   | phosphorylase kinase complex       |                          |
| 184      | AK011725                | 69928                      | STIK                                  | cytos keleton                      | cell cycle               |
| 13.3     | A 4/                    |                            |                                       | Cytaskeletali                      | unknown                  |
|          | AK021227                | 78531                      | lassan                                |                                    | unknown                  |
|          | NM_01669                |                            | Incenp                                | chromosome-, pericentric region;   | cell cycle               |
|          | AK018646                | 75761                      | w.                                    |                                    | apoptos is               |
| He d     | NM_01160                |                            | <u>Tlm</u>                            | extracellular;integral to membra   | tumor related            |
|          | NM_02316                |                            | Mrpl4                                 | ribos ome                          | translation              |
| ris e    | AK018662                | 74549                      |                                       |                                    | unknown                  |
|          | NM_02732                |                            | S fxn1                                | integral to membrane; mitochondri  | transport                |
| 4-4      | NM_01963                |                            |                                       | integrat to plasma membrane        | tumor related (receptor) |
|          | MM_01953                |                            | Dscr2                                 | Integral to plasma membrane;memb   | cell cycle               |
|          | NM_00760                |                            | Capn1                                 | cytoplasm                          | protein degradation      |
|          | NM_02648                |                            |                                       | endoplasmic reticulum              | unknown                  |
| - "      | NM_02299                |                            | Arl6lp5                               | integral to membrane               | transport                |
| 1        | NM_01036                |                            | Gsto1                                 | cytoplasm                          | misc                     |
| :        | NM_01373                |                            | Tceb3                                 | nucleus                            | transcription            |
|          | NM_01101                | 2 18389                    | Oprl                                  | integral to plasma membrane        | signaling (receptor)     |
|          | AK021099                | 77462                      |                                       |                                    | unknown                  |
|          | NM_05318                | 3 94213                    | Ddx50                                 | nucleolus                          | translation              |
| "        | NM_00782                |                            |                                       | cytoplasm;nucleus                  | apoptosis                |
|          | NM_00910                | 6 20166                    | Rtkn                                  | Intracellular; membrane            | signaling                |
| 1        | AK017787                |                            |                                       | chloroplast                        | protein degradation      |
| 100      | NM_00870                |                            |                                       | cytoplasm                          | misc                     |
|          | BC005658                |                            |                                       |                                    | cell cycle               |
| HARA!    | NM_0087                 |                            |                                       | Integral to membrane               | apoptosis                |
| 19838927 |                         |                            |                                       |                                    | unknown                  |
|          | 総線 女人いいメノベト             |                            |                                       |                                    |                          |
|          | 製 AK008736<br>製 NM 0264 |                            |                                       | integral to membrane               | HIRKIOWA                 |
|          | NM_0264                 | 17 67864                   |                                       | Integral to membrane               | unknown                  |
|          | NM_0264<br>AB035381     | 17 67864<br>17075          | 9 Cgi152                              | integral to membrane               | me ta bolis m            |
|          | NM_0264                 | 17 67864<br>17075<br>76484 | 9 Cgi152                              |                                    |                          |



Log<sub>2</sub>(ratio)

# Figure 5 / C

| i<br>.3 |       |              |                     |        |                                       |                                   | rigule 5% C          |
|---------|-------|--------------|---------------------|--------|---------------------------------------|-----------------------------------|----------------------|
| <br>    |       | Α            | CCESS               | LOCUS  | GENE                                  | LOCALIZATION                      | BIOLOGICAL FUNCTION  |
| 9       | 出     | NM           | _020584             | 57321  | Terf2lp                               | chromosome-, telomeric region;nu  | cell cycle           |
|         |       | AK           | 003609              | 76308  |                                       | Golgi apparatus; endoplasmic reti |                      |
|         |       | BC           | 003957              | 78408  |                                       | - agraphorous, or no pissinic tes | signaling            |
|         |       | BC           | 002198              | 102334 | Ankrd10                               |                                   | transport            |
|         |       | AF4          | 48804               | 72162  | Dhx36                                 |                                   | transcription        |
|         |       | AK           | 010387              | 69748  |                                       |                                   | translation          |
|         |       | 21           | _021371             | 140904 | Caln1                                 | <del>-</del>                      | metabolism?          |
| 1       | i i   | 13.43        | 326960              | 21380  | Tbx1                                  | Microbubulamuslava                | signaling            |
|         |       |              | _019816             | 56321  | Aatf                                  | microtubule;nucleus               | transcription        |
|         |       | 0.60         | 010328              | 69702  | Ndufaf1                               | mitochondrial inner membrane; nuc | a poptos is          |
| 1       | Mi    | 183          | 006739              | 22217  | Usp12                                 | mitochondrion                     | translation          |
|         |       | 7.7          | 018220              | 69190  |                                       |                                   | protein degradation  |
| 1       | 1     |              | 003794              | 97541  | Qars                                  |                                   | unknown              |
| H       |       | (1) The same | 013596              | 72929  | quis                                  |                                   | translation          |
|         |       | 1            | 014500              | 77047  |                                       | dynein complex                    | unknown              |
| 200     | . : M | 3 e          | 010752              | 73694  |                                       | - Julia Complex                   | ctsk                 |
|         |       | 22.2         | _019836             | 56412  |                                       | Avtrace thiles are a state and to | unknown              |
| 2000    |       | G I A        | 017214              | 71323  |                                       | extracellular space;integral to   | unknown              |
| 100     |       |              | _020616             | 57373  | ICRFP703B1614Q5                       | 6                                 | tumor related        |
| 44.4    |       | 25.5         | _019648             | 56307  | Metap2                                |                                   | unknown              |
|         |       | 74.7         | 305                 | 00007  | Мошре                                 | large ribosomal subunit           | protein degradation  |
| ĺ       |       |              | _009806             | 12361  | Cask                                  |                                   | unknown              |
| 1       |       |              | _015830             | 50817  | Solh                                  | actin cytoskeleton; basolateral p | signating            |
|         |       | TALK.        | 016398              | 19079  | Prkab1                                | cytoplasm                         | unknown              |
| 25      |       |              | 004472              | 68891  | FIKADI                                | cytoplas m; nucleus               | lipid metabolism     |
|         |       |              | 015559              | 74946  | · · · · · · · · · · · · · · · · · · · |                                   | signaling (receptor) |
| 0       |       | 1 177        | 007355              | 69035  | Zdhhc3                                | Calalan                           | unknown              |
|         |       |              | _025835             | 66904  | Pccb                                  | Golgl apparatus;integral to memb  | protein degradation  |
|         |       |              | _019659             | 56379  | Kenji                                 | blotin carboxylase complex;extra  | metabolism           |
| 12.00   | 1 6   |              | _033568             | 27681  | D11Moh34                              | voltage-gated potassium channel   | ion cannel           |
|         |       |              | 017442              | 71453  | DTTMO034                              | plasma membrane                   | unknown              |
|         |       |              | 011064              | 70235  |                                       |                                   | ctsk?                |
| 1       |       |              | _016909             | 53424  | Tsnax                                 | membrane                          | unknown              |
| 6       |       |              | _020050             | 56786  | 131107                                | mitochondrial inner membrane;nuc  | misc                 |
| 200     |       |              | _011522             | 20974  | S yngr3                               | extracellular space;integral to   | signaling?           |
| í       |       |              | _011018             | 18412  | Sqstm1                                | integral to plasma membrane       | unknown              |
|         |       | 17.17        | _008014             | 14208  | Ppm1g                                 | cytosol                           | protein degradation  |
| ě       |       |              | _023633             | 71952  | 1 pining                              | nucleus; protein serine-threonine | cell cycle           |
|         |       |              | 017460              | 71448  |                                       | cytos ol                          | unknown              |
|         |       |              | _008797             | 18563  | Рсх                                   |                                   | unknown              |
|         | -     |              | _008115             | 14586  | Gfra2                                 | mitochondrion                     | metabolism           |
|         |       |              | _013759             | 27361  | Sepr                                  | extracellular space;membrane      | signaling (receptor) |
|         |       |              | 003901              | 107951 | Cdk9                                  | A                                 | metabolism           |
|         |       |              | 003358              | 68576  | Curs                                  | transcription elongation factor   | cell cycle           |
| 1       |       |              | 003914              | 58875  |                                       |                                   | unknown              |
| -       | H     |              | 004090              | 73747  |                                       | mitochondrion                     | misc                 |
|         |       |              | 009886              | 71923  |                                       |                                   | unknown              |
| -       |       |              | 019772              | 56372  |                                       | integral to man-han-              | unknown              |
| 1       |       |              | 004191              | 66061  |                                       | integral to membrane              | protein degradation? |
| 1       |       |              | _019691             | 14802  | Grla4                                 | Avtracellulas appead              | ctsk ?               |
| -       |       |              | _010255             | 14431  |                                       | extracellular space; integral to  | signaling (receptor) |
| i       |       |              | 016917              | 74446  | Gamt                                  | cytoplas m                        | meta bolism          |
|         |       |              | 010934              | 18166  | Npy1r                                 | membrane                          | unknown              |
| -       |       |              | _009624             | 11515  | Adcy9                                 | integral to plasma membrane       | signaling            |
|         |       |              | 007766              | 76510  |                                       | integral to plasma membrane       | misc                 |
|         |       |              | 041586              | 76454  |                                       |                                   | unknown              |
|         |       |              | _018731             | 11944  | Atala                                 |                                   | unknown              |
| i       |       |              | 008418              | 16491  | Atp4a                                 | Integral to membrane              | metabolism           |
| -       | Q.    |              | 014811              | 75801  | Kcna3                                 | voltage-gated potassium channel   | transport            |
| j       |       |              | _020614             |        | Tamb                                  | DAY:                              | unknown              |
|         |       |              | _020614<br> _016769 | 21340  | Tafib                                 | RNA polymerase I transcription f  | cell cycle           |
|         |       |              | 1_010769            | 17127  | Madh3                                 | nucteus:plasma membrane           | transcription        |
|         |       | AV           | 016857              | 13808  | Eno3                                  | phosphopyruvate hydratase comple  | me tabolism          |
| E       |       |              | 01003/              | 71074  |                                       |                                   | unknown              |
|         | S     | 2            |                     |        |                                       |                                   |                      |



Log<sub>2</sub>(ratio)

# Figure 5 D

|        |         | ACCESS                 | LOCUS           | GENE            | LOCALIZATION  | BIOLOGICAL FUNCTION                |
|--------|---------|------------------------|-----------------|-----------------|---|------------------------------------|
|        | ٠, :    | NM_008761              | 18301           | Fxyd5           | extracellular space; integral to                                      | transport                          |
| -      | : :     | AK019466               | 77626           |                 | Integral to membrane  | misc                               |
|        |         | NM_018798              | 54609           | Ubqln2          | endoplasmic redculum membrane   | unknown                            |
|        |         | AK009282               | 71897           |                 | membrane  | signaling (receptor)               |
|        |         | NM_013867              | 29815           | Bcar3           | actin filament  | signaling (GEF)                    |
| 100    |         | AK003819               | 74777           |                 |   | misc                               |
|        |         | NM_024189              | 67057           | Yaf2            | nucleoplasm   | unknown                            |
|        |         | NM_011921              | 26358           | Aldh1a7         |   | metabolism                         |
| 102    |         | NM_009025              | 19414           | Rasa3           | plasma membrane   | signaling (GAP)                    |
|        |         | NM_053271              | 116838          | RIms2           |   | signaling                          |
|        | - 7     | AK002842               | 68386           |                 |   | unknown                            |
|        | _       | NM_023805              | 76257           | S lc38a3        | integral to plasma membrane   | transport                          |
|        |         | BC016616               | 76022           | ···             |   | unknown                            |
|        |         | AK018520               | 71544           | 14 0:0          |   | cell cycle                         |
| -      |         | NM_008550<br>NM_011961 | 17160           | Man2b2          | extracellular space; lysosome   | metabolism                         |
|        |         |                        | 26432           | Plod2           | endoplasmic reticulum;extracellu                                      | metabolism                         |
|        | -       | NM_007531              | 12034           | Bcap37          | mitochondrion   | signaling                          |
|        | _       | AF303106<br>X66323     | 110012<br>22596 | Gtrgeo22        | integral to membrane  | misc                               |
|        |         | AF317517               | 77889           | Xrcc5           | cytoplasm;single-stranded DNA de                                      | misc                               |
|        |         | AF 179996              | 20362           | sep-08          | nucleus   | transcription                      |
| 2      | -       | NM_025415              | 66197           | Cks2            |   | ctsk                               |
|        |         | AK015457               | 74655           | CRSE            |   | , cell cycle                       |
|        |         | NM_030880              | 80708           | Pacsin3         | Golgi trans face  | unknown                            |
|        |         | AK019549               | 68187           | 1 0031113       | ougratis lace   | transport                          |
|        |         | NM_026306              | 67674           |                 |   | unknown                            |
|        | ,       | NM_021516              | 17169           | Mark3           | microtubule cytoskeleton  |                                    |
|        | 7       | BC012975               | 14526           | Gcg             | extracellular space   | cts k ?                            |
|        | ÷       | NM_009472              | 22253           | Unc5c           | extracellular space; integral to                                      | signaling (receptor)               |
|        |         | AK005609               | 69315           |                 |   | unknown                            |
|        |         | NM_053193              | 94230           | Cpsf1           | mR NA cleavage and polyadenylatio                                     | transcription                      |
|        |         | NM_007502              | 11933           | Atp1b3          | sodium-potassium-exchanging ATPa                                      | transport                          |
|        |         | AK013690               | 19328           | Rab12           | intracellular   | tumor related                      |
|        |         | NM_008403              | 16413           | ltgb1bp1        |   | signaling                          |
| Ш      |         | AK015640               | 70646           |                 |   | unknown                            |
|        |         | NM_016778              | 51800           | - Bok           |   | apoptosis                          |
|        |         | NM_026162              | 67448           | Plxdc2          | extracellular space; integral to                                      | signaling                          |
|        |         | NM_011791              | 23808           | Ash2l           |   | transcription                      |
|        | -       | NM_019501              | 56075           |                 | chloroplast   | misc                               |
|        |         | NM_010638              |                 | Bteb1           | transcription factor complex  | transcription                      |
|        |         | NM_008915              |                 | Ррр3сс          | protein serine-threonine phospha                                      | signaling                          |
|        |         | AJ400622               | 230157          | Tmeff1          |   | protein degradation                |
| 15184  | _       | NM_007728              |                 | Coch            | extracellular matrix;extracellul                                      | misc                               |
|        | -       | NM_008580              |                 | Map3k5          | cytoplasm   | signating (MAPK)                   |
|        |         | AK005063               | 110351          | Rap1ga1         |   | signaling                          |
| -      | _       | NM_009255              |                 | Serpine2        | extracellular space   | protein degradation (secreted)     |
|        |         | NM_009130<br>NM_008358 |                 | Scg3            | cytoplas m; extracellular s pace                                      | misc                               |
| 1:::   |         |                        |                 | ll15ra<br>Cpne8 | extracellular space; integral to                                      | immune response (receptor)         |
| 5.00   | ot diff | AK004559<br>AK012847   | 66871<br>72674  | υμιεο           | membrane  | transport                          |
|        |         | NM_026B19              |                 | Dhre 1          | Integral to membrane  | unknown                            |
|        |         | NM_026423              |                 | Dhrs1           | etikarvoje translatios islaisto                                       | metabolism                         |
|        |         | NM_020624              |                 |                 | eukaryotic translation initiatio                                      | translation                        |
|        |         | NM_018733              |                 | Scn1a           | Integral to membrane  | Unknown                            |
|        |         | AY044265               | 235339          | Dlat            | Integra) to membrane; membrane fr<br>pyruvate dehydrogenase complex ( | ion cannel                         |
| 77.00  | =       | AK011541               | 71810           | Didi            | by and detiling obstrase combiex (                                    | metabolism                         |
| -      |         | NM_00950:              |                 | Vcp             | Golgi apparatus; endoplasmic reti                                     | Unknown                            |
| Market | -       | AK011234               | 72459           |                 | 81 abbara mayeridobigarinic red                                       | transport .                        |
|        |         | NM_01970:              |                 | Pfkp            | 6-phosphofructokinase complex   | translation                        |
| 12.5   |         | NM_01950               |                 | Dgke            | Integral to membrane  | metabolism<br>signaling, transport |
|        |         | NM_01876               |                 | Catnel1         | zonula adherens   | cell adh                           |
|        |         | AK016267               | 65103           | Arl6ip6         | integral to membrane  | unknown                            |
|        |         | AK019985               | 77521           | 1 ·             | non-muscle myosin   | signaling                          |
| _      |         |                        |                 |                 |   |                                    |

igure 52 A

| BIOLOGICAL FUNCTION | translation            | misc                   | uwowyun     |                         | นยกรเลขอก | transport                    | emb signating (receptor)        | ١                          | ипклочт         | signaling (receptor)        | ii signaling   |                              | metabolism        |
|---------------------|------------------------|------------------------|-------------|-------------------------|-----------|------------------------------|---------------------------------|----------------------------|-----------------|-----------------------------|--|------------------------------|-------------------|
| LOCALIZATION        | mitochandrion;ribasame | extracellularimembrane |             | large ribosomal subunit |           | extracellular space;membrane | dmom emada.onordamon at Jane 1. | megrat to menual and brash | plasma membrane | integral to plasma membrane | in instruction of the contraction  o oigi appai a matai a matai | cytopíasm         |
| GENE                | Mrps17                 | Don2                   | 100         |                         |           | Abp1                         |                                 | Mc4r                       | Rabgef1         | Opri                        |  | Rab2                         | Hor               |
| TOCUS               | 6625R                  | 220260                 | 20000       | 18187                   | 6229      | 76507                        |                                 | 17202                      | 56715           | 18389                       |  | 59021                        | 15452             |
| ACCESS LOCUS GENE   | NAM 025450 66258       | MIN DOODG 220360       | ININI DOGGE | AK019549                | AK007884  | AKO05423                     | אורטיין דיי                     | AF201662                   | NM 019983 56715 | NIA 011012 18389            | TO LO MAN  | NM_021518 59021              | TENN 013556 15452 |
|                     |                        |                        |             |                         |           |                              |                                 |                            |                 |                             |  |                              |                   |

SN8 SN8



# Figure 52 B

|  |                        |          |             |                                     | _                     |
|--|------------------------|----------|-------------|-------------------------------------|-----------------------|
|  | ACCESS                 | LOCUS    | GENE        | LOCALIZATION                        | BIOLOGICAL FUNCTION   |
| # ## /   | AK 002309              | 68327    |             | cytoplasm                           | unknown               |
|  | AK013197               | 66390    |             |                                     | translation ?         |
|  | BC016616               | 76022    |             |                                     | unknown               |
|  | BC 016616<br>AK 014652 | 74574    | <del></del> |                                     | unknown               |
|  | NM_011126              | 18843    | Plunc       | extracellular,integral to plasma    | tumor related         |
|  | AJ 133536              | 20955    | Sybl1       | Golgi apparatus; endoplas mic reti  | translation           |
|  | AK 007864              | 67893    |             | membrana ?                          | unknown               |
| Control of the Control   | AJ308965               | 101739   | Psip2       | extracellular space                 | transcription?        |
| A 100 Mary 1 | NM_009276              | 20819    |             | <del></del>                         | transcription         |
| 72.50  |                        | 72124    | Srst        | nucleus<br>nuclear pore             | <del></del>           |
|  | AK011330               |          | Gdap3       |                                     | tra fflc              |
| -  | Y17852                 | 14548    |             | mitochondrion                       | unknown               |
|  | BC003247               | 229725   | McIc        |                                     | transport             |
|  | NM_007688              | 12632    | C fi2       | cytoskeletor;nucleus                | ctsk                  |
|  | AF039839               |          |             |                                     | unknown               |
|  | AJ007376               | 26900    | Ddx3y       |                                     | cell cycle            |
|  | NM_053105              |          | K Ihl1      | cytoskeleton                        | ctsk                  |
|  | NM_021483              |          | Pex2        | peroxisomal membrane                | unknown               |
|  | NM_009282              | 20842    | Stag1       | nucleus                             | cell cycle            |
|  | AK016267               | 65103    | Art6ip6     | integral to membrane                | unknown               |
|  | AK006923               | 73476    |             |                                     | unknown               |
|  | NM_023884              |          |             | nucleosome                          | signaling (GEF)       |
|  | NM_010101              | 13610    | E dg3       | integral to plasma membrane         | signaling             |
| 45 36  | AK016715               | 76799    |             |                                     | signaling?            |
|  | AK003820               | 76295    | Аф11ь       | Integral to membrane; plasma memb   | meta bolism           |
|  | AK020724               | 77578    | Bcl9        | nucleus                             | Immune response       |
|  | NM_020610              | 78593    | Nrip3       |                                     | unknown               |
| E108 C 108 C 108 C 108 C   | AJ 252147              | 66413    |             | proteasome complex (sensu Eukary    | unknown               |
|  |                        | 50850    | Spg4        | nucleus                             | mìsc                  |
|  |                        |          | Ceng1       | nuclear cyclin-dependent protein    | cell cycle            |
| 15.  |                        |          | Cdk5        | cytos ol;filopodium; la mellipodium | cell cycle            |
|  |                        |          | BC005682    | integral to membrane                | misc                  |
|  | BC002226               | 170833   |             |                                     | unknown               |
| 200000000000000000000000000000000000000  | AK018573               | 71517    | HOOKE       | membrane                            | unknown               |
|  | NM_02544               |          | Nicn1       | Membrase                            | unknown               |
|  | NM_00946               |          | Ubi1        | nuclear pore                        | cell cycle            |
|  |                        |          | ODIT        | Tactes por                          |                       |
|  | AK014695               | 71633    | Voof        |                                     | unknown               |
|  | AF343581               | 72322    | Xpo5        | nucleus                             | transport             |
| The second second  | NM_01666               |          | Mata2       |                                     | tumor related         |
|  | AK019589               | 78109    |             |                                     | unknown               |
|  | AK014327               | 244672   |             |                                     | unknown               |
|  | NM_02055               |          | C1d         | transcriptional repressor comple    | transcription         |
|  | NM_01963               |          | S tk3       | cytoplasm;protein kinase CK2 com    | apoptosis             |
|  | BC 004653              |          |             | nucleoplasm                         | transcription         |
|  |                        | 70998    |             |                                     | transcription         |
|  | NM_01966               |          | Mycbp       | cytoplas m; nucleus                 | transcription         |
|  | AK014435               |          | Brp441      |                                     | unknown               |
|  | 图 NM_01739             | 95 53970 | R fx5       | Intermediate filament               | transcription         |
| 10.00  | AK014735               |          |             |                                     | นทหกอพท               |
| 1. ģl 11 k   | NM_02540               |          |             | extracellular space;integral to     | unknown               |
| MAN  | NM_0213                | 16 57754 |             | integral to membrane                | unknown               |
| WE F   | AK015640               |          |             |                                     | unknown               |
| 1114   | NM_0229                | 92 65106 |             | Integral to membrane                | transport             |
| 110 4  | NM_0095                | 51 22682 |             |                                     | transcription?        |
|  | NM_0097                |          |             | Golgi membrane; endoplas mic retic  | transport             |
|  | AJ223782               |          |             | actin cytoskeleton                  | ctsk                  |
|  | NM_0110                |          |             | cytoplasm                           | apoptosis             |
| 1111   | AK00925                |          |             |                                     | translation           |
|  | NM_0333                |          |             | mitochondrial small ribosomal su    | transcription         |
|  |                        |          |             | transcription factor complex        |                       |
|  | NM_0265                |          |             | cytoplasm                           | protein degradation ? |
|  | AK00513                |          |             | nucleus                             | unknown               |
|  | NM_0187                |          |             | cytoplasm                           | protein degradation   |
|  | NM_0106                |          |             | Integral to plasma membrane         | ion channel           |
|  | MM_0080                | 14209    | 9 Fin14     | integral to membrane                | unknown               |
|  |                        |          |             |                                     |                       |



# Figure 52 C

|                         | ACCESS                | LOCUS            | GENE            | LOCALIZATION  | BIOLOGICAL FUNCTION    |
|-------------------------|-----------------------|------------------|-----------------|---|------------------------|
|                         | AK013379              | 78771            |                 | Integral to membrane  | unknown                |
|                         | NM_010911             | 18041            | Nfs1            | cytosol; extracellular space; mito  | metabolism             |
|                         | NM_010313             | 14697            | Gnb5            | heterotrimeric G-protein complex  | signaling              |
|                         | AK012283              | 72569<br>66556   | Drap1           |   | unknown ·              |
|                         | AK010152              |                  | <del> </del>    | negative cofactor 2 complex   | transcription          |
|                         | NM_019701             | 56365<br>75102   | Clenk1i         | Integral to membrane  | ion channel            |
|                         | AK015717              | 68735            |                 | — the about delegation of the company   | unknown ·              |
| and to the              | AK004139              | 72774            | Neil1           | mitochondrion;ribosome  | translation            |
|                         | AK013322<br>NM_019409 | 18377            | Omg             | nucleus extracellular space;integral to   | misc<br>signaling      |
| The Late of the Late of | AK019915              | 78271            | Onig            | exuacential space, integral to  |                        |
|                         | AK013313              | 52132            | D7Ertd462e      | cytoplasm   | unknown                |
| P-14-                   | AK003450              | 74319            | DILIMADE        | membrane  | unknown ,              |
|                         | NM_024197             | 67273            | Ndufa10         | extracellular space; mitochondrio   | metabolism             |
|                         | AK005146              | 76499            | Clasp2          | Golgi apparatus;cytoplasmic micr  | ctsk                   |
| an and                  | AK019886              | 68151            | - CASPE         | o organization of the state of | unknown                |
|                         | AF 229644             | 54646            | DXImx48e        | integral to membrane;microtubule  | signaling              |
| HHH                     | AK004676              | 67459            | DANIAGO         | nucleus   | transport              |
| 12.0                    | NM_011334             |                  | Clcn4-2         | Integral to plasma membrane   | ion channel            |
|                         | AB049650              | 75398            | Mrp132          | mitochondrial large ribosomal su  | translation            |
|                         | NM_021332             |                  | Glp1r           | extracellular space; integral to  | signaling (receptor)   |
|                         | NM_017379             |                  | Tuba8           | microtubule   | ctsk                   |
|                         | NM_011949             |                  | Mapk1           | cytoplasm;nucleus   | signaling              |
|                         |                       |                  |                 | membrane  | unknown                |
| me                      | NM_009011             |                  | Rad23b          | repairosome   | cell cycle             |
|                         |                       |                  | V ps 45         | Golgi apparatus; membrane   | transport              |
|                         | BC011091              | 109815           | H47             | integral to membrane  | unknown                |
|                         | AK014610              | 74352            |                 | intracellular   | transcription          |
| 如眉                      | AK014839              | 51938            | D3E rtd789e     | myosin ?  | ctsk ?                 |
|                         | AF 224264             | 233908           | Fus             | cytoplasm;transcription factor T  | unknown                |
|                         | NM_010358             | 14862            | Gstm1           | cytoplasm   | metabolism             |
| 201                     | AK014175              | 73205            |                 |   | unknown                |
|                         | NM_009104             | 20135            | Rrm2            | cytoplasm;rlbonucleoside-diphosp  | cell cycle             |
|                         | NM_008761             | 18301            | Fxyd5           | extracellular space;integral to   | transport              |
|                         | NM_011870             | 23991            | Cib1            | synaptic vesicle  | signaling              |
| 4.                      | NM_031184             | 83396            | GII5            | transcription factor complex  | transcription          |
|                         | NM_00879              | 7 18563          | Рсх             | mitochondrion   | metabolism             |
|                         | AK002252              | 68323            |                 |   | unknown                |
|                         | NM_00902              |                  | Rag2            | alpha DNA polymerase-:primase co  | cell cycle             |
| النا                    | BC004739              | 213211           | Rnf26           |   | a poptos is            |
|                         | NM_01115              |                  |                 |   | unknown                |
| _ بننا                  | AK006273              | 69441            |                 |   | unknown                |
|                         | X17647                | 18212            | Ntrk2           | cytosol;Integral to membrane;pla  | signaling (receptor)   |
|                         | BC005598              | 98221            | Ga17            | signalosome complex   | protein degradation    |
| -                       | NM_03071              |                  | Gats<br>Mens 20 | 15 - L - 13   | unknown '              |
|                         | AK011036              | 66230            | Mrps 28         | mitochondrion   | translation            |
| 200                     | NM_01378<br>NM_02579  |                  | Gnefr           | cytoplas m; nucleus   | misc                   |
| -                       | AK003132              | 0 66834<br>75406 | Them2           | extracellular space; mitochondrio   | misc                   |
| - \ <u> </u> -          | NM_00813              |                  | Ndufs7          | mitochondrion   | meta bolis m           |
| See also                | AK009888              |                  | Glud            | milliochonarion   | metabolism<br>cell adh |
|                         | AF 193608             |                  | Donson          |   | unknown                |
| -:-                     | NM_00772              |                  |                 | extracellular matrix;extracellul  | misc                   |
|                         | NM_00770              |                  |                 | nucleus   | transcription ?        |
| ar ije                  | NM_01995              |                  |                 | endoplasmic reticulum;integral t  | protein degradation    |
| ¬ •••j                  | NM_00816              |                  |                 | mitochondrion   | meta bolis m           |
|                         | NM_02640              |                  |                 | mitochondrial ribosome  | mlsc                   |
|                         | NM_02148              |                  |                 | extracellular space   | misc (secreted)        |
|                         | AK016247              |                  |                 | cytosol   | metabolism             |
| <b>}</b>                | NM_0107               |                  |                 | extracellular space   | Immune response        |
| <del> </del>            | NM_0197               |                  |                 | nucleus   | transcription          |
| - i                     | AK019515              |                  |                 | lysosome  | metabolis m            |
| <u>}</u>                | AK013540              |                  |                 |   | misc                   |
|                         |                       |                  |                 |   |                        |



Log<sub>2</sub>(ratio)

# Figure 52 D

|             |             |        |            |  | rigule 32 D                 |
|-------------|-------------|--------|------------|--|-----------------------------|
|             | ACCESS      | LOCUS  | GENE       | LOCALIZATION   | BIOLOGICAL FUNCTION         |
| 4 1 1       | NM_010073   | 13481  | Dpm2       | endoplasmic reticulum;integral t   | metabolism                  |
| -           | BC004020    | 11603  | Agrn       | extracellular s pace   | signaling (secreted)        |
|             | NM_008990   | 19294  | Pvrl2      | extracellular space; integral to   | cell adh                    |
|             | BC004771    |        |            | and the second s | unknown                     |
|             | BC002298    | 19283  | Ptprz1     | extracellular matrix;extracellul   |                             |
|             | NM_019676   | 18799  | Plcd       | cytoplasm  | signaling (receptor)        |
|             | AK019095    | 78887  | 1100       | Суюразті   | signaling                   |
|             | NM_025876   | 66971  | Cdk5rap1   | over collular angre  | unknown                     |
|             | NM_009950   | 12905  | Cradd      | extracellular space  | cell cycle                  |
|             | BC 004690   | 216274 | BC004690   | cas pase complex;Intracellular   | apoptosis                   |
|             | AK005314    | 19342  |            | cytos keleton  | unknown                     |
|             |             |        | Rab4b      | Intracellular  | Transport                   |
| -           | NM_007899   | 13601  | Ecm1       | extracellular matrix;extracellul   | ecm                         |
|             | AK007503    | 69101  |            |  | unknown                     |
| 4444        | NM_011251   | 19654  | Rbm6       | spliceosome complex  | misc                        |
|             | AK003209    | 75725  |            |  | unknown                     |
|             | NM_026187   | 52231  | D1Ertd161e |  | transcription?              |
|             | AK003358    | 68576  |            |  | unknown                     |
|             | NM_008226   | 15166  | Hcn2       | Integral to membrane   | lon channel                 |
| 19          | NM_026096   | 67334  |            | nucleosome;nucleus   | unknown                     |
| 1           | AK016936    | 71075  |            |  | unknown                     |
| 200         | NM_010417   | 15203  | Heph       | extracellular space  | transport                   |
| City        | NM_009582   | 26404  | Map3k12    | cytoplasm;plasma membrane  | signaling (MAPK)            |
|             | AK019527    | 78903  | Wrnip1     | DNA replication factor C complex   | mlsc                        |
|             | NM_013932   | 30959  | Ddx25      |  | translation                 |
|             | NM_016910   | 53892  | Ppm1d      | protein serine-threonine phospha   | signaling                   |
|             | BC008101    | 68939  |            |  | signaling                   |
| 1 T         | NM_010254   | 14428  | Galr2      | integral to membrane   | signaling (receptor)        |
|             | AK009937    | 71941  |            |  | transcription ?             |
|             | NM_008590   | 17294  | Mest       | extracellular space  | protein degradation         |
|             | AK019665    | 78174  |            | mitochondrion  |                             |
|             | BC004640    | 97064  |            | ubiquitin ligase complex   | metabolism<br>transcription |
| 210 423     | NM_030252   | 80284  | BC003266   | extracellular space  |                             |
| 23.         | AK006185    | 70373  | 50005200   | are decidar space  | unknown                     |
| F-1         | NM_011256   | 19679  | Rdgb2      | Integral to membrane; intracellul  | unknown                     |
|             | AF061934    | 50782  | Rgs11      | heterotrimeric G-protein complex   | transport                   |
| 7           | NM_033370   | 70349  | Copb1      | Golgi membrane;Golgi vesicle;cyt   | signaling                   |
|             | NM_011962   | 26433  | Plod3      | endoplasmic reticulum; extracellu  | vansport                    |
|             | NM_025596   |        | 1 1003     |  | metabolism                  |
| -           | AK002298    | 71660  | Rarres2    | mitochondrion  | transport?                  |
|             | AK009522    | 71901  | Kallesz    | extracellular space  | misc                        |
|             |             | 81896  | Wdr10      | autoples   | unknown                     |
|             | NM_019639   |        | Ubc        | cytoplas m   | unknown                     |
|             | NM_008138   |        |            | nucleus  | protein degradation         |
|             | NM_020619   |        | Gnai2      | plasma membrane  | signaling (receptor)        |
|             | NM_010243   |        | Gcs1       | endoplasmic reticulum  | misc                        |
|             | <del></del> |        | Fut9       | Golgi apparatus;integral to memb   | metabolism                  |
| <b> </b> }  | NM_008072   |        | Gabrd      | extracellular space; integral to   | signaling (receptor)        |
| <b> </b> -  | AK020104    | 77733  | 0. 10      | Integral to membrane ?   | unknown                     |
|             | NM_007581   | 12297  | Cacnb3     | voltage-gated calcium channel co   | lon channel                 |
| -           | NM_030262   |        |            |  | unknown                     |
| !           | NM_009732   |        | Avp        | extracellular space  | growth factor (secreted)    |
| <b> -!-</b> | BC 005792   | 170789 | Pte1       | peroxis ome  | metabolism                  |
|             | AB035381    | 170759 | Cgi152     | Integral to membrane   | me ta bolis m               |
|             | NM_026551   |        |            |  | metabolism?                 |
|             | NM_009539   | 22637  | Zap70      | phosphoinositide 3-kinase comple   | Immune response (receptor)  |
|             | NM_008161   |        | Gpx3       | extracellular space  | metabolism                  |
|             | AK010963    | 70312  |            |  | unknown                     |
|             | BC 004581   | 98432  | A1836256   |  | unknown                     |
|             | AK013465    | 12348  | Car11      | cytoplas m   | metabolis m                 |
|             | NM_008451   |        | Klc2       | kinesin complex  | ctsk                        |
|             | NM_018772   |        | Bri3       | Integral to membrane   | transport                   |
|             | AK003542    | 73728  |            | mitochondrial inner membrane   |                             |
|             | AK008734    | 72349  | Dusp3      | ononeman must inclinitude  | unknown                     |
|             | BC018220    | 69190  | ·· /       |  | signaling                   |
|             |             | 100    |            |  | unknown                     |

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| BIOLOGICAL FUNCTION | misc                | malpholism           | The boundary         | motabollem | transcription                    | Signaling                     | unknown                    | nwonyun  | signating          | Concadan                          | protein degradation    | sionaling                         | Topical and the second | Uariscipuori<br>Caralles (cocopia | Signaling (lecepuit             | пикпомп                          | пикломп  | unknown              | unknown  | signaling                        | signaling?                              | protein degradation | protein degradation | ctsk                      | antein demarktion | House and the second | unknown  | can cycle |
|---------------------|---------------------|----------------------|----------------------|------------|----------------------------------|-------------------------------|----------------------------|----------|--------------------|-----------------------------------|------------------------|-----------------------------------|------------------------|-----------------------------------|---------------------------------|----------------------------------|----------|----------------------|----------|----------------------------------|---|---------------------|---------------------|---------------------------|-------------------|----------------------|----------|-----------|
| LOCALIZATION        | extracellular space | Integral to membrane | integral to memorane | membrane ? | hydrogen-transporting ATE ase VI | Integral to membrane; nucleus | cympiasmic vesicie, inched |          | her almachaptarist | Golgi apparatus;entuopiasitus per | Call No leaves and the | proteasome activation confined by |                        | nucleus;septin ring               | extracellular space;integral to | cytoplasm;extracellular space;in |          | Integral to membrane | R        | overa collular space:Integral to | 2 |                     | nucieus             | promasome core conjugated | cytoskeleton      | extra cellular space |          |           |
| GENE                | Scrg1               | Tmc6                 | AU041707             |            | Am6v1g2                          | Preb                          | Anp32e                     |          |                    |                                   |                        | Psme3                             | Rasd2                  | Miz1                              | Trem1                           |                                  | 27626014 | Alesocou             | Allolpo  | 608/                             | roil                                    |                     | Ubeza               | Psmb6                     | C dc42ep4         | Serpina6             | GioT     | Tusc4     |
| TOCUS               | 20284               | 217353               | 102247               | 66510      | 66237                            | 50907                         | 66471                      |          | 74025              | 76308                             | 71281                  | 19192                             | 75141                  | 17344                             | 58217                           | 20107                            | 20170    | 98432                | 50103    | 71492                            | 19271                                   | 231672              | 22209               | 19175                     | 66999             | 12401                | 109801   | 56032     |
| ACCESS              | INM 009136          | BC013502             | NM 018743            | AK018849   | NM_023179                        | NM_016703                     | NM_023210                  | AL078630 | AK014393           | AK003609                          | AK017014               | INM 011192                        | AK015898               | AK018146                          | NIM 021406                      | NW 021400                        | ANOTIESE | BC004581             | AK016267 | AK018389                         | D83203                                  | AK015338            | NM_019668           | NM 008946                 | NM 020006         | NM 007618            | AK002386 | NM_018879 |
| •                   |                     | <u> </u>             | t                    | <u> </u>   | 上                                |                               |                            |          | -                  |                                   |                        | L                                 | -                      |                                   | Ì                               | j                                | _        |                      | _        |                                  | _                                       | <u>_</u>            |                     | Ϊ                         | Ĺ                 | ĺ                    | Ì        | Έ         |



Figure 53 B

| .3  |                | ACCESS                | LOCUS   | GENE                                  | LOCALIZATION   | BIOLOGICAL FUNCTION      |
|-----|----------------|-----------------------|---------|---------------------------------------|--|--------------------------|
| ·   | 1              | NM_009846             | 12484   | Cd24a                                 | extracellular space; plas ma membr   | immune response          |
|     |                | NM_021504             | 59007   | Ngly1                                 | cytoplasm;nucleus  | protein degradation      |
|     |                | AK017294              | 71331   |                                       |  | unknown                  |
| 體   |                | AK019934              | 70255   |                                       |  | unknown                  |
|     |                | AF440737              | 69362   |                                       | extracellular space  | misc (secreted) ?        |
|     |                | NM_023835             | 76681   | Trim12                                | cytoplasm  | unknown                  |
|     |                | NM_008113             | 14570   | Arhgdig                               | cytoplasm  | signaling - ctsk         |
|     | MI             | NM_007474             | 11833   | Aqp8                                  | Integral to plasma membrane;mito   | transport                |
|     |                | NM_009688             | 11798   | Birc4                                 | cytosal  | apoptos is               |
|     |                | X54327                | 107508  | E prs                                 |  | translation?             |
|     |                | BC005672              | 230784  | Sesn2                                 | extrachromosomal circular DNA;nu   | cell cycle               |
|     | 111            | NM_031877             | 83767   | Wasfl                                 | actin cytoskeleton   | ctsk                     |
| Ŧ   |                | AK011832              | 72465   | Zfp131                                |  | transport                |
|     |                | NM_011908             | 24109   | <b>ПР13</b>                           |  | unknown                  |
| - 5 |                | NM_080289             | 76238   | Grhpr                                 |  | metabolism               |
|     |                | NM_019643             | 56306   | Tera                                  |  | unknown                  |
|     |                | NM_008974             | 19244   | Ptp4a2                                | soluble fraction   | signaling                |
|     |                | NM_008230             | 15186   | Hdc                                   | extractiromosomal circular DNA   | metabolism               |
|     |                | NM_024477             | 209683  | Al428795                              |  | Unknown                  |
|     |                | NM_024201             | 67433   |                                       |  | unknown                  |
| 2   |                | AK011950              | 67157   |                                       |  | unknown                  |
| . } | 1              | NM_030708             | 80892   |                                       | extracellular,nucleus  | transcription            |
|     | 9              | NM_008307             | 15547   | Htf9c                                 | mitochondrial inner membrane   | misc                     |
| Į.  |                | NM_009895             | 12700   | Cish                                  | cytoptasm;plasma membrane  | signaling                |
|     |                | AK016612              | 74426   |                                       |  | unknown                  |
|     |                | NM_008871             | 18787   | Serpine1                              | extracellular space  | protein degradation      |
|     |                | NM_018734             | 55932   | Gbp3                                  | cytosol  | immune response          |
| 2   |                | BC003932              | 67278   |                                       |  | unknown                  |
| 73  |                | AK005001              | 74159   | Acbd5                                 | Integral to membrane   | transport                |
| 类   |                | NM_008301             | 15512   | Hspa2                                 | cytoplasm  | translation              |
|     |                | AK014830              | 80708   | Pacsin3                               | Golgi trans face   | ctsk                     |
| 4   |                | NM_026309             | 67678   | Lsm3                                  |  | misc                     |
|     |                | AK019863              | 77634   | · · · .                               |  | translation              |
| 2   | 2              | AK007505              | 68118   |                                       |  | unknown                  |
| 1   |                | NM_009357             | 21766   | Tex261                                | extracellular space; integral to   | ilpid metabolism         |
| -   |                | NM_026435             | 67890   | · · · · · · · · · · · · · · · · · · · |  | unknown                  |
| -   | -              | AK004041              | 68730   |                                       |  | unknown                  |
| ļ   | -4-            | AK005010              | 71768   |                                       |  | unknown                  |
| į.  | pie            | NM_024479             | 79565   | BC002286                              | endoplasmic reticulum  | protein degradation?     |
|     | 4              | AK014764              | 74600   | <del></del>                           |  | translation              |
| - 9 |                | NM_008920             | 19074   | Prg2                                  | cytoplasm; extracellular space   | growth factor (secreted) |
| -   |                | K02138                |         |                                       |  | unknown                  |
| 1-  |                | AK015536              | 106248  |                                       |  | unknown                  |
| -   | -}-            | NM_030611             | 83702   | Akr1c6                                | cytoplas m   | metabolism               |
| ŀ   | _ _            | AB039933              | 70335   | Dp111                                 | Integral to membrane   | transport                |
| -   | <u></u>        | NM_019959             |         | C1qtnf1                               | extracellular space  | signaling (receptor) ?   |
| -   |                | AK006923              | 73476   | Dealth                                | Calal  | unknown                  |
| ŀ   | <b>-</b> ; -   | AK018159              | 18549   | Pcsk2                                 | Golgi apparatus; extracellular sp  | translation              |
| ŀ   | -}-            | AK013710              | 73051   | · · · · · · · · · · · · · · · ·       |  | unknown                  |
| ŀ   | ¦              | BC017625              | 68047   | N66412                                | about the state of | unknown                  |
| ŀ   | }              | NM_019768<br>AK013427 |         | Morf412                               | chromatin;nucleus  | transcription            |
| ŀ   | }              | NM_025683             | 104884  |                                       | <del></del>  | signaling                |
| - } | ¦              | AF 282304             |         | R pe                                  | late and to member   | metabolism               |
| ŀ   | ¦              |                       | 258276  |                                       | integral to membrane   | signaling (receptor)     |
| ŀ   |                | NM_026107             |         | D11Ertd714e                           | transcription factor complex   | transcription            |
| - 1 |                |                       |         | 1111                                  | extracellular space  | Immune response          |
| -   |                | NM_026040             |         | <del></del>                           | <del></del>  | unknown                  |
| - 1 |                | AK016545              | 74390   | 61-27-0                               | N.J.   | Unknown                  |
| 1   |                | BC005744              | 72144   | Slc37a3                               | extracellular space;integral to  | transport                |
| - 1 | <del></del> }- | NM_013596             |         | Mc5r                                  | Integral to membrane   | signaling                |
| - 1 | <del>  -</del> | AK013022              | 69227   | Delegen                               | Colologopa   | unknown                  |
|     | <del>  -</del> | NM_00885              | 8 18760 | Prkcm                                 | Golgi apparatus; cytosol; extracel   | signaling                |
| - 1 |                | X16301                |         |                                       |  | unknown                  |



Log<sub>2</sub>(ratio)

# Figure 53 C

| .3  |                  | ACCESS                 | LOCUS          | GENE        | LOCALIZATION   | BIOLOGICAL FUNCTION    |
|-----|------------------|------------------------|----------------|-------------|--|------------------------|
| Ε   |                  | NM_009070              | 19826          | Rnps1       | Viral nucleocapsid   | transcription          |
|     | 1.               | BC005659               | 171388         | Bnipl       | membrane   | apoptosis              |
|     |                  | NM_025718              | 66705          | Dnase112    | extracellular space  | misc                   |
| 3   |                  | NM_011177              | 19144          | Prss18      | cytopias mextracellular space  | protein degradation    |
| E   |                  | AK021208               | 77422          |             |  | unknown                |
|     |                  | AK005015               | 246277         | Csad        |  | metabolism             |
| E   |                  | NM_009069              | 19769          | Rit1        | plasma membrane  | signaling              |
| 3   | 1 3              | AK006110               | 67080          |             |  | unknown                |
| 1   | - 1              | AF276974               | 192201         |             | extracellular space  | unknown                |
| - [ |                  | NM_016806              | 53379          | Hnrpa2b1    | nucleus;ribonucleoprotein comple                                     | transcription          |
| [   |                  | BC 003479              | 216820         |             | mitochondrion  | metabolism             |
|     | . 3              | : AK002757             | 56282          | Mrpl12      | mitochondrial ribosome   | translation            |
|     | 4.               | NM_010799              | 17330          | Minpp1      | endoplasmic redculum;extracellu                                      | metabolism             |
| L   |                  |                        | 12592          | C dx4       | transcription factor complex   | transcription          |
| L   | S 2              |                        | 74356          |             |  | unknown                |
| ļ.  |                  | NM_023516              | 69573          |             | extracellular space;integral to                                      | unknown                |
| ŀ   |                  | AK003571               | 68507          | Ppfia4      |  | signaling (receptor) ? |
| L   |                  | NM_019649              | 56457          | Clptm1      | aspartate carbamoyltransferase c                                     | mlsc                   |
| Į.  |                  | M60510                 | 83796          | Smarcd2     | nucleus ?  | transcription?         |
| ŀ   | -                | AK016870               | 71176          | Fbxo24      |  | mlsc                   |
| ļ   | 14               | NM_025273              | 13180          | Pcbd        | cytoplas manucleus   | mlsc                   |
| ļ   |                  | AK019878               | 78935          |             |  | unknown                |
| 1   |                  | NM_008712              | 18125          | Nos1        | суторіаят; зупарзе   | signating              |
| ļ   |                  | AK016597               | 71027          |             |  | unknown                |
| ١   | _ _              | AK002293               | 12793          | Cnih        | integral to membrane   | signaling              |
| ١   |                  | AK 009135              | 73919          |             | · · · · · · · · · · · · · · · · · · ·                                | unknown                |
| ļ   |                  | NM_019629              | 56290          | Prp15       |  | unknown                |
|     | $\vdash$         | NM_009848              | 12495          | Entpd1      | basal lamina;Integral to membran                                     | signaling (receptor)   |
|     | -                | AK014834               | 75778          | <del></del> |  | unknown '              |
|     | -                | BC005568               | 75689          | D-1-4       | Integral to membrane   | unknown                |
| 1   | -                | NM_021567              | 59092          | Pcbp4       | cytoplas m;nucleus;ribonucleoprot                                    | transcription          |
|     | -                | NM_021530<br>NM_008076 | 59033          | S lc4a8     | Integral to membrane   | transport              |
|     | ┝                | AK007077               | 14409<br>73572 | Gabrr2      | axon;extracellular space;integra                                     | signaling (receptor)   |
|     | HENRY OF         | NM_009273              | 20813          | Ѕгр14       | stand recombler as dist  | unknown                |
|     |                  | BC016080               | 103963         | Rpn1        | signal recognition particle  | signating              |
|     |                  | NM_012019              |                | Pdcd8       | endoplasmic reticulum;extracellu<br>cytosol;mitochondrial intermembr | lipid metabolism       |
|     |                  | AF 140708              | 21462          | Tcp10c      | Cywsol, mwentanan anenthen ibi                                       | apoptosis              |
|     |                  | NM_029478              |                | 100100      | membrane   | signaling (receptor) ? |
|     |                  | NM_019587              | 140571         | Plxnb3      | extracellular space; integral to                                     | Unknown                |
|     | THE RESERVE      | AK004814               | 97541          | Qars        | ovaracinari, space, megiai w   | signaling (receptor)   |
|     |                  | AK018132               | 74008          |             | lysosome   | mis c<br>signaling     |
|     |                  | BC002199               | 211556         | BC002199    | extracellular  | unknown                |
|     |                  | BC009141               | 75062          | Sf3e3       | spliceosome complex  | Transcription          |
|     |                  | AK013280               | 67229          |             | spliceosoma complex  | transcription          |
|     |                  | Y11717                 | 15400          | Ноха3       | transcription factor complex   | transcription          |
|     |                  | BC004766               | 71799          | Ptcd1       | ribosome   | unknown                |
|     |                  | AK012726               | 28036          | D3Wsu161e   |  | unknown                |
|     | <b>MM</b> 4      | NM_009261              |                | Spnr        | microtubule cytoskeleton   | ctsk                   |
|     |                  | AK015650               | 67509          |             |  | unknown                |
|     |                  | K009365                | 76437          | D11Bwg0414e |  | นกหาดพาก               |
|     |                  | NM_008233              | 15193          | Hdgfrp2     | extracellular space;nucleus  | growth factor          |
|     | MIL              | M AK013727             | 14397          | Gabra4      | Integral to plasma membrane  | signaling              |
|     |                  | AK015957               | 75207          |             |  | unknown                |
|     |                  | AB020542               | 170938         | LOC 170938  | transcription factor complex   | unknown                |
|     |                  | NM_011855              |                | Odz1        | extracellular, integral to plasma                                    | protein degradation    |
|     |                  | NM_007868              |                | Dmd         | cytos keleton; membrane; synapse                                     | ctsk                   |
|     |                  | AK009813               | 269423         |             |  | unknown                |
|     |                  | NM_011804              |                |             |  | unknown                |
|     |                  | BC 016210              | 67017          |             | extracellular space;integral to                                      | unknown                |
|     |                  | NM_026069              |                |             | mitochondrion  | unknown                |
|     | 1 T. Sale Co. C. | NM_01974               |                | Pdcd10      |  | a poptos is            |
|     |                  | <b>蘇爾 NM_019776</b>    | 5 56463        | AL033314    |  | transcription          |
|     |                  |                        |                |             |  |                        |



# Figure 53 D

|                            |          |                 |  | J                          |
|----------------------------|----------|-----------------|--|----------------------------|
| ACCESS                     | LOCUS    | GENE            | LOCALIZATION                                   | BIOLOGICAL FUNCTION        |
| NM_011021                  | 18420    | Оф              | transcription factor complex                   | transcription              |
| NM_010509                  | 15976    | lfnar2          | extracellular space;integral to                | signaling (receptor)       |
| NM_012045                  | 26971    | Pla2g2f         |  | signating                  |
| NM_011990                  | 26570    | SIc7a11         | Integral to membrane                           | trans port                 |
| NM_008033                  | 14272    | Fnta            | cytoplasm                                      | misc                       |
| AK007617                   | 69127    |                 |  | tumor related              |
| NM_025310                  | 56095    | Epcs3           | membrane                                       | misc                       |
| AK004849                   | 52428    | Rhpn2           | cytosol  | signaling                  |
| AK014446                   | 52118    | D7Ertd458e      |  | tumor related              |
| NM_026411                  | 67851    | D72104302       |  | unknown                    |
| NM_025835                  |          | Pecb            | blotin carboxylase complex;extra               |                            |
|                            | 72871    | FCCD            | bloth Carboxylase Complex,extra                | meta bolism                |
|                            | 20541    | Slc8a1          | Integral to placema mambrane                   | unknown                    |
|                            | 12226    | Btg1            | Integral to plasma membrane                    | transport                  |
| BC006834                   |          |                 |  | apoptosis                  |
| AK010005                   | 71924    | Tube1           | pericentriolar material                        | ctsk                       |
| AK006211                   | 67630    | Samd8           | integral to membrane                           | signaling                  |
| AK021076                   | 67287    |                 |  | unknown                    |
| NM_023500                  |          | Xkh             | extracellular space; integral to               | transport                  |
| AK005035                   | 71775    |                 | extracellular space                            | transport                  |
| NM_019968                  |          | Arm1            | Golgi apparatus                                | misc                       |
| NM_008744                  |          | Ntn1            | extracellular matrix;extracellul               | ecm                        |
| NM_010577                  |          | Itga5           | cytoskeleton;extracellular matri               | cell adh                   |
| NM_009467                  | 7 22238  | Ugt2b5          | integral to membrane; microsome                | lipid metabolism           |
| AK016083                   | 75311    |                 |  | unknown                    |
| AK010310                   | 67755    | Ddx47           | cytoplasm                                      | misc                       |
| NM_009707                  |          | Arhgap6         | actin filament                                 | signaling                  |
| MM_00753                   | 1 12034  | Bcap37          | mitochondrion                                  | signaling                  |
| AK016282                   | 75863    |                 |  | unknown                    |
| NM_00873                   | 3 18175  | Nrap            | fascia adherens;striated muscle                | ctsk                       |
| NM_01957                   | 1 56224  | Tm4sf9          | integral to membrane                           | cell adh                   |
| NM_01182                   | B 23908  | Hs2st1          | extracellular space; integral to               | metabolism                 |
| AK019542                   | 68259    |                 | ·  | unknown                    |
| AK006650                   | 73296    | R hobtb3        |  | Signaling                  |
| NM_02616                   |          | Pbxdc2          | extracellular space; integral to               | signaling                  |
| NM_00758                   |          | Cacng2          | extrecellular space;tight juncti               | ion channel                |
| U53591                     | 14112    | Fau-ps3         |  | unknown                    |
| NM_01576                   |          | Txnrd1          | cytos ol                                       | transport                  |
| NM_01071                   |          | Lhx2            | transcription factor complex                   | transcription              |
| NM_00902                   |          | Rb1             | chromatin;transcription factor c               | cell cycle                 |
| NM_02609                   |          | KD1             | nucleosome;nucleus                             | unknown                    |
| BC004831                   | 228608   | 3 S mox         |  |                            |
| NM_01992                   |          | Akap10          | membrane                                       | misc<br>transport?         |
| NM_01204                   |          | Polk            | mitochondrion extrachromosomal circular DNA;nu |                            |
|                            |          |                 |  | cell cycle                 |
| AF061934<br>NM_00932       | 50782    | Rgs11<br>Slc6a6 | heterotrimeric G-protein complex               | signaling                  |
|                            |          |                 | Integral to plasma membrane                    | transport                  |
| D50872                     | 19204    | Ptafr           | integral to membrane                           | signaling (receptor)       |
| AF 224264                  |          |                 | cytoplasm;transcription factor T               | unknown                    |
| AK017578                   |          | Nrxn1           | Integral to membrane;membrane fr               | cell adh                   |
| AK015929                   |          | Ch-             | 10.0   | unknown                    |
| NM_00769                   |          |                 | extracellular space;synaptic ves               | signaling (secreted)       |
| NM_0073                    |          | <del></del>     | Integral to membrane                           | a poptos is                |
| <b>III</b> BC003988        |          |                 | intracellular                                  | tumor related (suppressor) |
| AK009282                   |          |                 | membrane                                       | signaling (receptor)       |
| NM_0078                    |          |                 | basolateral plasma membrane;cyto               | misc                       |
| NM_0231                    |          |                 | nucleus  | transcription              |
| NM_0110                    | 25 18429 | Oxt             | extracellular space                            | signaling (secreted)       |
| AK017836                   | 76742    | Snx27           |  | unknown                    |
| AK002637                   | 7 66689  |                 | actin cytoskeleton                             | ctsk?                      |
| BC00223                    |          |                 | nucleus  | mlsc                       |
| NM_0136                    |          |                 | mitochondrial inner membrane                   | misc                       |
| AK002704                   |          |                 |  | signaling                  |
| NM_0136                    |          |                 | Integral to membrane                           | signaling                  |
| AK00229                    |          |                 |  | unknown                    |
| Desired Additional Landson |          |                 |  |                            |

| Access               | Cene:            |
|----------------------|------------------|
| AB003303 .           | 20493 Slc10a1    |
| AB023957             | 170773 AB023957  |
| AB049641             | 68537 Mrpl13     |
| AB055154             | 108138 Xrcc4     |
| AF009011             | 12005 Axin       |
| AF039839             | ,                |
| AF062567             | 20687 Sp3        |
| AF071173             | 15204 Herc2      |
| AF083812             | 17120 Mad1I1     |
| AF131865             | 16561 Kif1b      |
| AF137031             | 83921 Tmem2      |
| AF156547             | 54668 Atp11c     |
| AF189771             | 11518 Add1       |
| AF217002             | 252972 Tpcn1     |
| AF229644             | 54646 DXImx48e   |
| AF303106             | 110012 Gtrgeo22  |
| AF334612             | 170761 Pdzk2     |
| AF343752             | 77053 Unc84a     |
| AF375046             | 93762 Smarca5    |
| AF411834             | 20620 Snk        |
| AJ292072             | 192160 Mln51     |
| AK002386             | 109801 Glo1      |
| AK002416             | 68350            |
| AK002458             | 68339            |
| AK002704             | 68365 Rab14      |
| AK002767             | 76509            |
| AK003191             | 68427 Slc39a13   |
| AK003423             | 71781 Slc16a14   |
| AK003496             | 73833            |
| AK003581             | 100764           |
| AK003698             | 74778            |
| AK003830             | 68523            |
| AK004074             | · 28106 II25     |
| AK004110             | 73750 Whrn       |
| AK004194             | 68836 Mrpl52     |
| AK004206             | 67282            |
| AK004410             | 52397 D5Ertd689e |
| AK004679             | 73340 Nptxr      |
| AK004688             | 74126            |
| AK005096             | 70364            |
| AK005098             | 68966            |
| AK005139             | 68262 Agpat4     |
| AK005182             | 72022 Slc35f2    |
| AK005386             | 72008            |
| AK005710             | 67283 Slc25a19   |
| AK005887             | 69354 Slc38a4    |
| AK006141             | 75656            |
| AK006185             | 70373            |
| AK006257             | 69371            |
| AK006257<br>AK006305 | 71848            |
| AK006305<br>AK006407 | 76420            |
| AK006487             | 75623            |
| AK006467<br>AK006619 | 73261            |
| AK006679             | 70201            |
| AK006897             | 73451            |
| ANOUUUUI             | 70701            |

Figure 54-1

AK007483 67169
AK007536 66262 Ing5
AK007552 56036 Ccnl2
AK007703 27410 Abca3
AK007787 67887

AK007894 75597 AK008083 72041 AK008333 70257 AK008537 67035 AK008793 72269 Cda AK008979 72383 AK008991 70137

75572 Acyp2 AK009134 69179 AK009341 71904 AK009450 268721 AK009454 66053 Ppil2 AK009460 67870 AK009954 70285 AK010079 71956 AK010429

AK010430 69219 Ddah1 AK010452 52666 D10Ertd610e

AK010511 11652 Akt2
AK010545 69742
AK010745 73689
AK010747 73692
AK010827 76826
AK010831 76773
AK011135 77048

AK011396 234729 D8Wsu151e AK011557 69903

AK011747 17237 Mgrn1
AK012129 74206
AK012624 72621
AK012767 109065
AK012812 69953
AK012842 72686
AK012848 72701

AK012848 72701 AK012944 20639 Snrpb2

AK013012 72184 AK013056 76373 57259 Tob2 AK013833 AK013995 73078 73190 AK014229 75430 AK014309 66696 AK014536 70804 AK014543 AK014549 74034 77043 AK014606 75770 AK014760 AK014772 74592

70852

AK014837

Figure 54-2

```
AK014872
                       70866 Slco6d1
AK014891
                       14479 Usp15
AK015014
                       70948 Wdr20
AK015063
                       75773
AK015098
                       73818
AK015114
                       73928
AK015454
                       67876
                       74910
AK015598
AK015888
                       67171
AK015972
                       75137
AK016135
                       75320
AK016202
                       75304
AK016990
                       74481
AK017014
                       71281
AK017182
                       75963
AK017215
                       67759
AK017320
                       67240
AK017352
                       71421
AK017451
                       71452
AK017597
                       70549 Tin2
AK017726
                       70625 Crsp7
AK017734
                       75712
                       66653 Brf2
AK017767
                       70640
AK017809
AK018191
                       67618 Aasdhppt
                       26413 Mapk1
AK018549
AK018646
                       75761
AK018963
                       78639
AK019059
                       59040 Arht1
                       77591 Ddx10
AK019495
                       78051
AK019809
                       78271
AK019915
AK020266
                       78906
AK020300
                       78240 Cst11
AK021021
                       16423 Cd47
AK021208
                       77422
AK021227
                       78531
AL078630
 AY029613
                       70359 Gtpbp3
 BC002094
                       12913 Creb3
 BC002193
                       110279 Bcr
 BC003197
                       22123 Psmd3
 BC003288
                       28088 D10Wsu52e
 BC003432
                      110842 Etfa
                      234463 BC004056
 BC004056
 BC005494
                      216157 ORF61
 BC005598
                       98221 Ga17
 BC005744
                       72144 Slc37a3
 BC005755
                       70465
 BC005788
                       71994 Cnn3
 BC007132
                       20924 Supt5h
 BC007481
                       140570 Plxnb2
 BC008543
                       84113 Ptov1
 BC015273
                       110157 Raf1
 BC016535
                       68556 Urkl1
 BC017138
                       109168
```

Figure 54-3

70615 D10Bur2e BC017633 70456 BC018324 BC018363 170755 Sgk3 BC018368 116733 Vps4a 11350 Abi1 J02995 13429 Dnm L31395 19056 Ppp3cb M81483 11820 App NM\_007471 NM\_007474 11833 Aqp8 11844 Arf5 NM\_007480 11899 Astn1 NM\_007495 12223 Btc NM\_007568 12317 Calr NM\_007591 12465 Cct5 NM\_007637 12492 Scarb2 NM\_007644 12512 Cd63 NM\_007653 12527 Cd9 NM\_007657 NM\_007666 12563 Cdh6 NM\_007714 12750 Clk4 12909 Crcp NM\_007761 12988 Csk NM\_007783 NM\_007788 12995 Csnk2a1 13014 Cstb NM\_007793 13491 Drd4 NM\_007878 13716 EII NM\_007924 13809 Enpep NM\_007934 13842 Epha8 NM\_007939 14290 Fpr-rs3 NM\_008040 14756 Gpld1 NM\_008156 14799 Gria1 NM\_008165 14811 Grin2a NM\_008170 15239 Hgs NM\_008244 15980 lfngr2 NM\_008338 16012 lgfbp6 NM\_008344 16176 II1b NM\_008361 NM\_008382 16326 Inhbe 16398 Itga2 NM\_008396 NM\_008580 26408 Map3k5 17344 Miz1 NM\_008602 18046 Nfyc NM 008692 26921 Map4k4 NM 008696 18099 NIk NM\_008702 18103 Nme2 NM\_008705 18197 Nsg2 NM\_008741 18563 Pcx NM\_008797 18718 Pip5k2a NM\_008845 18759 Prkcl NM\_008857 18858 Pmp22 NM\_008885 19207 Ptch2 NM\_008958 19414 Rasa3 NM\_009025 19646 Rbbp4 NM\_009030 19692 Reg1 NM\_009042 20166 Rtkn NM\_009106 20284 Scrg1 NM\_009136 20384 Sfrs5 NM\_009159 20444 Slat5 NM\_009179

Figure 54-4

| VM_009197 | 20502 Slc16a2             |
|-----------|---------------------------|
| VM_009254 | 20719 Serpinb6a           |
| NM_009270 | 20775 Sqle                |
|           | 20905 Sts                 |
| NM_009293 | 21974 Top2b               |
| NM_009409 |                           |
| NM_009423 | 22032 Traf4               |
| NM_009424 | 22034 Traf6               |
| NM_009440 | 22127 Tsx                 |
| NM_009510 | 22350 Vil2                |
| NM_009706 | 11855 Arhgap5             |
| NM_009707 | 11856 Arhgap6             |
| NM_009717 | 11922 Neurod6             |
| NM_009773 | 12236 Bub1b               |
|           | 12339 Capn7               |
| NM_009796 | 12359 Capin<br>12353 Car6 |
| NM_009802 |                           |
| NM_009805 | 12633 Cflar               |
| NM_009840 | 12469 Cct8                |
| NM_009886 | 12614 Celsr1              |
| NM_010109 | 13640 Efna5               |
| NM_010133 | 13798 En1                 |
| NM_010198 | 14166 Fgf11               |
| NM_010218 | . 14221 Fjx1              |
| NM_010347 | 14797 Aes                 |
| NM_010568 | 16337 Insr                |
| NM_010592 | 16478 Jund1               |
|           | 16857 Lgals6              |
| NM_010707 | 17319 Mif                 |
| NM_010798 |                           |
| NM_010941 | 18194 Nsdhl               |
| NM_011049 | 18555 Pctk1               |
| NM_011074 | 18647 Pftk1               |
| NM_011116 | 18807 Pld3                |
| NM_011175 | 19141 Lgmn                |
| NM_011183 | 19165 Psen2               |
| NM_011244 | 19411 Rarg                |
| NM_011251 | 19654 Rbm6                |
| NM_011316 | 20211 Saa4                |
| NM_011336 | 20301 Ccl27               |
| NM_011401 | 20527 Slc2a3              |
| NM_011421 | 20597 Smpd1               |
| NM_011487 | 20849 Stat4               |
|           | 20869 Stk11               |
| NM_011492 |                           |
| NM_011522 | 20974 Syngr3              |
| NM_011651 | 22116 Stk22s1             |
| NM_011829 | 23917 Impdh1              |
| NM_011904 | 24087 TII2                |
| NM_011906 | 24100 Tpra40              |
| NM_011930 | 26373 Clcn7               |
| NM_012017 | 26919 Zfp346              |
| NM_012043 | 26968 Isir                |
| NM_013483 | 12231 Btn1a1              |
| NM_013535 | 14790 Grcc10              |
|           | 16997 Ltbp2               |
| NM_013589 | •                         |
| NM_013614 | 18263 Odc                 |
| NM_013661 | 20357 Sema5b              |
| NM_013672 | 20683 Sp1                 |
| NM_013680 | 20964 Syn1                |
|           |                           |

Figure 54-5

| NM_013818              | 14904 Gtpbp1              |   |        |
|------------------------|---------------------------|---|--------|
| NM_013884              | 29873 Cspg5               | • |        |
| NM_013908              | 30839 Fbxw5               |   |        |
| NM_015728              | 11416 Slc33a1             |   |        |
| NM_015737              | 14426 GaInt4              |   |        |
| NM_015753              | 24136 Zfhx1b              |   |        |
| NM_015795              | 50759 Fbxo16              |   |        |
| NM_015806              | 50772 Mapk6<br>53614 Reck |   |        |
| NM_016678              | 51789 Tnk2                |   |        |
| NM_016788              | 54138 Sca10               |   |        |
| NM_016843              | 14226 Fkbp1b              |   |        |
| NM_016863<br>NM_016877 | 53621 Cnot4               |   |        |
| NM_016879              | 53622 Krt2-18             |   |        |
| NM_016888              | 53625 B3gnt1              |   |        |
| NM_016894              | 51801 Ramp1               |   |        |
| NM_017395              | 53970 Rfx5                |   |        |
| NM_017478              | 54160 Copg2               |   |        |
| NM_018795              | 27421 Abcc6               |   |        |
| NM_018798              | 54609 Ubqln2              |   |        |
| NM_018821              | 54607 Socs4               |   | •      |
| NM_018823              | 54446 Nfat5               |   |        |
| NM_018888              | 56046                     |   |        |
| NM_019415              | 20497 Slc12a3             |   | -      |
| NM_019473              | 29845 Olfr155             |   |        |
| NM_019718              | 56350 Arl3                |   |        |
| NM_019735              | 56369 Mmrp19              |   |        |
| NM_019768              | 56397 Morf4l2             |   |        |
| NM_019799              | 56315 Rhcg                |   | 0 00   |
| NM_019942              | 56526                     |   | Sep-06 |
| NM_020256              | 56805 Zbtb33              |   |        |
| NM_020257              | 93675 Dcl1<br>57438 Axot  |   |        |
| NM_020575              | 57432                     |   |        |
| NM_020594              | 20370 Sez6                |   |        |
| NM_021286<br>NM_021307 | 57745 Zfp112              |   |        |
| NM_021371              | 140904 Caln1              |   | •      |
| NM_021373              | 58173 AB030188            |   |        |
| NM_021414              | 74340                     |   |        |
| NM 021457              | 14362 Fzd1                |   |        |
| NM_021489              | 58992 F12                 |   |        |
| NM_021493              | 58996                     |   |        |
| NM_021509              | 59012 Moxd1               |   |        |
| NM_021539              | 59043 AA673511            |   |        |
| NM_021550              | 59048                     |   |        |
| NM_021568              | 59093 Pcbp3               |   |        |
| NM_021921              | 60597 Mapk8ip2            |   |        |
| NM_022321              | 64099 Parvg               |   |        |
| NM_022653              | 50492 Thop1               |   |        |
| NM_023465              | 67087 Catnbip1            | - |        |
| NM_023598              | 71371 Desrt               |   |        |
| NM_023773              | 75339                     |   |        |
| NM_023868              | 20191 Ryr2                |   |        |
| NM_023871              | 56086 Set                 |   |        |
| NM_024228              | 68616                     |   |        |
| NM_025273              | 13180 Pcbd                |   |        |
|                        |                           |   |        |

Figure 54-6

| NM_025303 | 29819 Stau2    |
|-----------|----------------|
| NM_025417 | 66199          |
| NM_025460 | 66271          |
| NM_025568 | •              |
| NM_025647 | 66588          |
| NM_025771 |                |
| NM_025963 | 67097          |
| NM_026154 | 107732 Mrpl10  |
| NM_026165 | 67453          |
| NM_026242 | 67568          |
| NM_026306 | 67674          |
| NM_026528 | 68045          |
| NM_026660 | 68294          |
| NM_026829 | 107885 Mthfs   |
| NM_026911 | 69019          |
| NM_027157 | 69664          |
| NM_028104 | 72112          |
| NM_028756 | 74102 Slc35a5  |
| NM_029716 | 108699 Chn1    |
| NM_031367 | 15061 H28      |
| NM_031879 |                |
| NM_033042 | 85030 Tnfrsf25 |
| NM_033565 | 93736 Laf4l    |
| NM_052994 | 94214 Spock2   |
| NM_053117 | 93737 Pard6g   |
| NM_054099 | 117171         |
| NM_080633 | 11429 Aco2     |
| U20780    | 217342         |
| U70139    | 12457 Ccm4l    |
| X58472    | 16588 Kin      |
| Y12229    | 22288 Utrn     |
| Y12713    | 27282 Erv4     |
| Y15910    | 54004 Diap2 ·  |

| Figure 55 A | BIOLOGICAL FUNCTION |
|-------------|---------------------|
|             | LOCALIZATION        |
|             | OCUS GENE           |
|             | LOCUS GENE          |
|             |                     |

| 1                   | 1               | 1                           | 1                       | ı           | ł               | 1                    | ı                                  | i                    | 1                               | ı               | ı                | 1                               | ı                                |
|---------------------|-----------------|-----------------------------|-------------------------|-------------|-----------------|----------------------|------------------------------------|----------------------|---------------------------------|-----------------|------------------|---------------------------------|----------------------------------|
| BIULUGICAL FUNCTION | unknown         | unknown                     | ctsk                    | a poptos is | signating       | transport            | cell adh - ecm                     | tansport             | signaling                       | signaling       | signaling (MAPK) | signaling (receptor)            | signaling                        |
| LOCALIZATION        |                 | integral to plasma membrane | cytos keleton; membrane | nucleolus   | plasma membrane | integral to membrane | cytos keleton; extracellular matri | integral to membrane | integral to membrane;microubule |                 | суюраят          | extracellular space;Integral to | protein serine-threonine phospha |
| GENE                | Fbxo16          | S yngr3                     | Add1                    | Zfp346      | Prkci           | Atp11c               | ltga2                              | Slc16a14             | DXImx48e                        | AA673511        | Map3k5           | Gria1                           | Ppp3cb                           |
| rocus               | 50759           | 20974                       | 11518                   | 26919       | 18759           | 54668                | 16398                              | 71781                | 54646                           | 59043           | 26408            | 14799                           | 19056                            |
| ACCESS LOCUS GENE   | NM_015795 50759 | NM_011522 20974             | AF189771                | NM_012017   | NM_008857 18759 | AF156547 54668       | NM_008396 16398                    | AK003423             | AF229644                        | NM_021539 59043 | NM_008580 26408  | NM_008165 14799                 | M81483                           |
|                     | H               | -                           | -                       | -           | -               | _                    | -                                  | -                    | -                               | -               | -                |                                 | -                                |
| ,                   | _               |                             |                         | !           |                 | _                    |                                    |                      | _                               | <u>'</u>        | _                |                                 | _                                |

BR BNS



Log<sub>2</sub>(ratio)

Figure 55 B

|  |   |  |  |  | riguie 55 b  |
|--|---|--|--|--|--|
|  | ACCESS  | LOCUS  | GENE   | LOCALIZATION   | BIOLOGICAL FUNCTION  |
|  | NM_011421   | 20597  | Smpd1  | Integral to membrane;lysosome  | metabolism   |
| 1                                      | NM_009159   | 20384  | Sfrs5  | spilceosome complex  | transcription  |
| +                                      | NM_008845   | 18718  | Pip5k2a  | cytoplasm  | lipid metabolism   |
| +                                      |   | 109065   | · ipones   | Сумриз   | unknown  |
| +-                                     | AK012767  |  |  |  |  |
| تسن                                    | AK003496  | 73833  | Ch. C  |  | unknown  |
| ــــــانــ                             | NM_013908   | 30839  | Fbxw5  | anaphase-promoting complex   | protein degradation  |
| 4-                                     | NM_008797   | 18563  | Pcx  | mitochondrion  | metabolism   |
| <u> </u>                               | NM_007783   | 12988  | Csk  | cytoplasm  | signaling  |
|  | NM_026154   | 107732   | Mrpl10   | mitochondrial large ribosomal su   | mlsc   |
|  | NM_025303   | 29819  | Stau2  | microtubule associated complex   | transport  |
| 1                                      | NM_008244   | 15239  | Hgs  | endos ome  | transport  |
|  | AK019809  | 78051  |  |  | unknown  |
|  | _NM_016788  | 51789  | Tnk2   | cytoplasm  | signaling  |
| 工                                      | _NM_009025  | 19414  | Rasa3  | plasma membrane  | signaling (GAP)  |
| $\Box$                                 | NM_007934   | 13809  | Enpep  | integral to membrane;plasma memb   | immune response  |
|  | AF071173  | 15204  | Herc2  |  | protein degradation  |
| $\neg$                                 | BC007481  | 140570   | Plxnb2   | Integral to plasma membrane  | Signaling (receptor)   |
| 7 TY                                   | NM_011930   |  | Clcn7  | integral to plasma membrane  | ion channel  |
| n 📆                                    |   | 67282  |  |  | unknown  |
| .60                                    |   |  | Impdh1   | cytoplasm  | metabolism   |
|  | NM_010347   |  | Aes  | nucleus  | transcription  |
| <u> </u>                               | BC005744  | 72144  | S lc37a3   | extracellular space; integral to   | transport  |
| -                                      | S BC003197  | 22123  | Psmd3  | 26S proteasome;cytosol   | protein degradation  |
| -                                      | AK012129  | 74206  | 1 311140   |  | unknown  |
|  | * AK003698  | 74778  |  | membrane   | misc   |
|  | AK012842  | 72686  |  | Hembrane   | unknown  |
| - V                                    | NM_017478   | <del></del>  | Cong2  | Golgi apparatus; membrane; viral c   | transport  |
|  |   | 216157   | Copg2<br>ORF61                                   | Gogi apparaus,membrane,virar c   |  |
| _                                      | BC005494  |  |  | integral to plasma membrane  | unknown  |
| -4                                     | NM_01941  |  | S lc12a3   |  | transport  |
|  | AF 343752   | 77053  | Unc84a   | cytoplasm;integral to membrane;n   | unknown  |
| -                                      | AK010429  | 71956  |  | cytoplasm  | unknown  |
|  | / NM_01687  |  | Krt2-18  | Intermediate filament  | ctsk   |
| 4                                      | AK010452  | 52666  | D10Ertd610e                                      | plas ma membrane   | tumor related  |
|  | NM_00776  |  | Стер   |  | signaling (receptor)   |
| 1 1                                    | NM_00747  |  | Арр  | Golgi apparatus; coated pit; endop   | cell adh   |
|  | 3:73  | 71281  |  |  | unknown  |
| 7.1                                    | NM_01149  |  | Stk11  | microtubule cytoskeleton   | Signaling  |
|  | AK 004074   | 28106  | 1125   | extracellular space  | growth factor  |
|  | NM_08063  | 3 11429  | Aco2   | mitochondrion  | metabolism   |
|  | : AK019495  | 77591  | Ddx10  |  | mlsc   |
| 7                                      | AK009954  | 67870  |  | extracellular  | unknown ·  |
|  | BC005788  | 71994  | Cnn3   | cytos keleton  | ctsk?  |
|  | NM_01686  | 3 14226  | Fkbp1b   |  | signaling  |
|  | AK016202  | 75304  |  |  | unknown  |
|  | NM_02265  |  | Thop1  | mitochondrion  | protein degradation  |
| **                                     |   |  | S Ico6d1   | integral to membrane   | transport  |
| ************************************** | AK016990  |  | · · · · · · · · · · · · · · · · · · ·            | nucleus  | transcription  |
| 1 .                                    | AK010511  | 11652  | Akt2   | Intracellular;protein kinase CK2   | cell cycle   |
|  | AK007703  |  |  | integral to plasma membrane  | misc   |
|  | NM_0086   |  |  | transcription factor complex   | transcription  |
| 1000                                   | NM_0318   |  |  |  | unknown  |
|  |   |  | Tpra40   | integral to membrane   | signaling (receptor)   |
| 1 ;                                    | "   NM 0119   |  |  | extracellular space; integral to   | cell adh   |
|  | NM_0119   |  | Cdb6   |  |  |
|  | NM_0076   | 66 12563   |  | extracendar space, mægrar w  |  |
|  | NM_0076<br>BC 00854   | 66 12563<br>8 84113  | Ptov1  |  | tumor related  |
| 71                                     | NM_0076<br>BC 00854:<br>NM_0083   | 66 12563<br>8 84113<br>44 16012  | Ptov1<br>Igfbp6                                  | extracellular space  | tumor related<br>growth factor   |
| 7.1                                    | NM_0076<br>BC 00854:<br>NM_0083   | 56 12563<br>8 84113<br>44 16012<br>5 59040   | Ptov1<br>Igfbp6<br>Arht1                         | extracellular space<br>integral to membrane  | tumor related<br>growth factor<br>signaling  |
| 7.12                                   | NM_0076<br>BC 00854<br>NM_0083<br>AK019059  | 56 12563<br>8 84113<br>44 16012<br>9 59040<br>7 17237  | Ptov1<br>Igfbp6<br>Arht1<br>Mgrn1                | extracellular space<br>integral to membrane<br>extracellular   | tumor related<br>growth factor<br>signaling<br>apoptosis   |
|  | NM_0076<br>BC 00854<br>NM_0083<br>AK 019059<br>AK 01174<br>AK 00468                                   | 66 12563<br>8 84113<br>44 16012<br>9 59040<br>7 17237<br>3 74126   | Ptov1<br>Igfbp6<br>Arht1<br>Mgrn1                | extracellular space<br>integral to membrane  | tumor related growth factor signaling apoptosis tumor related (receptor)                                   |
|  | NM_0076<br>BC 00854<br>NM_0083<br>AK 019059<br>AK 01174<br>AK 00468                                   | 66 12563<br>84113<br>44 16012<br>9 59040<br>7 17237<br>8 74126<br>71 14090                                       | Ptov1 Igfbp6 Arht1 Mgrn1  C Caln1                | extracellular space<br>integral to membrane<br>extracellular<br>endoplasmic reticulum;integral t                   | tumor related growth factor signaling apoptosis tumor related (receptor) signaling                         |
|  | NM_0076<br>BC 00854:<br>NM_0083<br>AK 019059<br>AK 01174:<br>AK 00468<br>NM_0213<br>AK 00538          | 66 12563<br>84113<br>44 16012<br>9 59040<br>7 17237<br>3 74126<br>71 14090<br>6 72008                            | Ptov1<br>Igfbp6<br>Arht1<br>Mgrn1<br>64 Caln1    | extracellular space Integral to membrane extracellular endoplasmic reticulum;integral t endosome                   | tumor related growth factor signaling apoptosis tumor related (receptor) signaling transport               |
|  | NM_0076<br>BC 00854<br>NM_0083<br>AK 019053<br>AK 01174<br>AK 00468<br>NM_0213<br>AK 00538<br>NM_0114 | 66 12563<br>8 44113<br>44 16012<br>9 59040<br>7 17237<br>74126<br>71 14090<br>6 72008<br>87 20848                | Ptov1 Igfbp6 Arht1 Mgrn1  4 Caln1  3 Stat4       | extracellular space Integral to membrane extracellular endoplasmic reticulum;integral t endosome cytoplasm;nucleus | tumor related growth factor signaling apoptosis tumor related (receptor) signaling transport transcription |
|  | NM_0076<br>BC 00854:<br>NM_0083<br>AK 019059<br>AK 01174:<br>AK 00468<br>NM_0213<br>AK 00538          | 66 12563<br>8 44113<br>44 16012<br>9 59040<br>7 17237<br>8 74126<br>71 14090<br>6 72008<br>87 20848<br>118 14221 | Ptov1 Igfbp6 Arht1 Mgrn1 64 Celn1 B G Stat4 Fjx1 | extracellular space Integral to membrane extracellular endoplasmic reticulum;integral t endosome                   | tumor related growth factor signaling apoptosis tumor related (receptor) signaling transport               |



Log<sub>2</sub>(ratio)

# Figure 55 C

| 3 |   |  |  |                                      |  | 119410000  |
|---|---|--|--|--------------------------------------|--|--|
|   |   | ACCESS   | LOCUS  | GENE                                 | LOCALIZATION   | BIOLOGICAL FUNCTION  |
| ı | TE I                                    | AF 375046  | 93762  | S marca 5                            | nucleus  | misc   |
|   |   | NM_009424  | 22034  | Traf6                                |  | protein degradation  |
|   |   | AK008537   | 67035  |                                      | cytoplasm  | translation  |
|   |   | MM_009510  | 22350  | V112                                 | cytoskeleton;microvillus   | ctsk   |
| ١ |   | NM_013589  | 16997  | Ltbp2                                | extracellular matrix   | ecm  |
| 1 | <b>EUS</b>                              | NM_008338  | 15980  | lfngr2                               | extracellular space;integral to  | immune response (receptor)   |
|   |   | MM_009805  | 12633  | Cflar                                |  | apoptosis  |
| į |   | NM_025647  | 66588  |                                      | cytoplasm;extracellular space;nu   | unknown  |
| Ì |   | NM_016894  | 51801  | Ramp1                                | extracellular space; integral to   | signaling  |
| 1 |   | AK005182   | 72022  | S lc35f2                             | integral to membrane   | transport  |
|   |   | NM_013535  | 14790  | Grcc10                               |  | unknown  |
|   | HH                                      | AK010831   | 76773  |                                      |  | unknown  |
|   |   | AF 334612  | 170761   | Pdzk2                                | actin cytoskeleton   | signaling  |
|   |   | NM_019718  | 56350  | Arl3                                 | Golgi apparatus  | signaling  |
| 1 |   | NM_013818  | 14904  | Gtpbp1                               | membrane   | immune response  |
|   |   | AL078630   |  |                                      |  | unknown .  |
|   |   | AK014837   | 70852  |                                      |  | unknown  |
|   |   | AK014772   | 74592  |                                      |  | unknown  |
|   |   | AK014549   | 74034  |                                      |  | unknown  |
|   |   | AK004410   | 52397  | D5Ertd689e                           |  | unknown  |
|   |   | AK017767   | 66653  | Brf2                                 | transcription factor complex   | transcription  |
|   |   | NM_021550  | 59048  |                                      | Integral to membrane   | unknown  |
|   |   | NM_008382  | 16326  | Inhbe                                | extracellular space  | growth factor (secreted)   |
|   |   | NM_026911  | 69019  |                                      | integral to endoplasmic reticulu   | protein degradation  |
|   | MILE                                    | NM_009840  | 12469  | C ct8                                | cytosal  | translation  |
|   |   | NM_019799  | 56315  | Rhcg                                 | Integral to plasma membrane  | transport  |
|   |   | NM_013483  | 12231  | Btn1a1                               | extracellular space; integral to   | Immune response (receptor)   |
|   |   | MM_007474  | 11833  | Aqp8                                 | integral to plasma membrane;mito   | transport  |
|   | Bar 1, 100 C                            | MM_009409  | 21974  | Top2b                                | chromosome; metaphase chromosome;  | misc   |
|   |   | NM_011336  | 20301  | C c 127                              | extracellular space; nucleus   | immune response (secreted)   |
|   | to proper deci un                       | AK012812   | 69953  |                                      |  | unknown  |
|   | and the same of                         | NM_007714  | 12750  | Clk4                                 | cytoplasm;nucleus  | signaling  |
|   |   | AK 005098  | 68966  |                                      |  | unknown  |
|   |   | AK012624   | 72621  |                                      | plasma membrane  | signaling  |
|   | MIN 19713 47                            | NM_009717  | 11922  | Neurod6                              | nucleus  | transcription  |
|   | Louis and a                             | AK017215   | 67759  |                                      |  | unknown  |
|   | -                                       | NM_009796  | 12339  | Capn7                                | nucleus  | protein degradation  |
|   | W 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | NM_011251  | 19654  | R bm6                                | s plice as ome complex   | mlsc   |
|   |   | BC 005598  | 98221  | Ga17                                 | signalosome complex  | protein degradation  |
|   |   | BC017138<br>NM_013661  | 109168   | A 51                                 |  | Immune response ?  |
|   |   |  | 20357  | Sema5b                               | extracellular space;Integral to  | signaling (receptor)   |
|   |   | AK021208   | 77422  |                                      |  | unknown  |
|   | LATHERN P                               | AK008333<br>NM_020575  | 70257<br>57438   | 0                                    | mitochondrion  | บกหาดพา  |
|   | -                                       | AK005887   |  | Axot<br>Slc38a4                      | ribos ome  | unknown  |
|   | EALIST IN                               |  |  |                                      | Integral to membrane   |  |
|   | -                                       |  | 69354  |                                      |  | transport  |
|   |   | AK012944   | 69354<br>20639   | S nrpb2                              | snRNP U2;viral nucleocapsid  | tra nscription   |
|   |   | AK012944<br>AK006679   | 20639  | S nrpb2                              | snRNP U2;viral nucleocapsid  | transcription<br>unknown   |
|   |   | AK012944<br>AK006679<br>NM_015737  | 20639<br>14426   |                                      |  | transcription<br>unknown<br>mlsc   |
|   |   | AK012944<br>AK006679<br>NM_015737<br>AK015098  | 20639<br>14426<br>73818  | S nrpb2<br>G a Int4                  | snRNP U2;viral nucleocapsid  | transcription<br>unknown<br>mlsc<br>unknown  |
|   |   | AK012944<br>AK006679<br>NM_015737<br>AK015098<br>AK007293  | 20639<br>14426<br>73818<br>76645   | S nrpb2  Gaint4  Pkd112              | s nRNP U2;viral nucleocapsid  Golgi apparatus;extracellular sp   | transcription unknown misc unknown unknown unknown   |
|   |   | AK012944 AK006679 NM_015737 AK015098 AK007293 NM_010198  | 20639<br>14426<br>73818<br>76645<br>14166  | S nrpb2<br>G a Int4                  | snRNP U2;viral nucleocapsid  | transcription unknown misc unknown unknown unknown growth factor   |
|   |   | AK012944<br>AK006679<br>NM_015737<br>AK015098<br>AK007293<br>NM_010198<br>AK008979   | 20639<br>14426<br>73818<br>76645<br>14166<br>72393   | S nrpb2  Gaint4  Pkd112              | snRNP U2;viral nucleocapsid  Golgi apparatus;extracellular sp  extracellular space   | transcription unknown mls c unknown unknown growth fector unknown  |
|   |   | AK012944<br>AK006679<br>NM_015737<br>AK015098<br>AK007293<br>NM_010198<br>AK008979<br>NM_025460  | 20639<br>14426<br>73818<br>76645<br>14166<br>72383<br>66271  | S nrpb2  Gaint4  Pkd112              | snRNP U2;viral nucleocapsid  Golgl apparatus;extracellular sp  extracellular space integral to membrane  | transcription unknown mls c unknown unknown growth factor unknown unknown  |
|   |   | AK012944 AK006679 NM_015737 AK015098 AK007293 NM_010198 NM_025460 AK010827   | 20639<br>14426<br>73818<br>76645<br>14166<br>72383<br>66271<br>76826   | S nrpb2  Gaint4  Pkd112              | snRNP U2;viral nucleocapsid  Golgi apparatus;extracellular sp  extracellular space  Integral to membrane extracellular space   | transcription unknown mise unknown unknown growth fector unknown unknown unknown   |
|   |   | AK012944 AK006679 NM_015737 AK015098 AK007293 NM_010198 AK008979 NM_025460 AK010827 AK007787   | 20639<br>14426<br>73818<br>76645<br>14166<br>72383<br>66271<br>76826<br>67887  | Snrpb2 Gaint4 Pkd1l2 Fgf11           | snRNP U2;viral nucleocapsid  Golgl apparatus;extracellular sp  extracellular space integral to membrane  | transcription unknown mise unknown unknown growth fector unknown unknown unknown unknown unknown   |
|   |   | AK012944 AK006679 NM_015737 AK015098 AK007293 NM_010198 AK008979 NM_025460 AK010827 AK007787   | 20639<br>14426<br>73818<br>76645<br>14166<br>72383<br>66271<br>76826<br>67887<br>54004   | S nrpb2  Gaint4  Pkd112              | snRNP U2;viral nucleocapsid  Golgi apparatus;extracellular sp  extracellular space  Integral to membrane extracellular space   | transcription unknown misc unknown unknown growth fector unknown unknown unknown unknown   |
|   |   | AK012944 AK006679 NM_015737 AK015098 AK007293 NM_010198 AK008979 NM_025460 AK010827 AK007787 Y15910 AK010079                                   | 20639<br>14426<br>73818<br>76645<br>14166<br>72383<br>66271<br>76826<br>67887<br>54004<br>70285  | Snrpb2 Gaint4 Pkd1l2 Fgf11           | s nRNP U2;viral nucleocapsid  G olgl apparatus;extracellular s p  extracellular space  integral to membrane extracellular space Integral to membrane                                   | transcription unknown misc unknown unknown growth fector unknown unknown unknown unknown unknown unknown unknown unknown   |
|   |   | AK012944 AK006679 NM_015737 AK015098 AK007293 NM_010198 AK008979 NM_025460 AK010827 AK01787 Y15910 AK01079 AK015888                            | 20639<br>14426<br>73818<br>76645<br>14166<br>72393<br>66271<br>76826<br>67887<br>54004<br>70285<br>67171                                     | Snrpb2 Gaint4 Pkd1l2 Fgf11           | snRNP U2;viral nucleocapsid  Golgi apparatus;extracellular sp  extracellular space integral to membrane extracellular space Integral to membrane                                       | transcription unknown mlsc unknown unknown growth fector unknown unknown unknown unknown unknown unknown unknown unknown unknown   |
|   | 等。<br>第二章                               | AK012944 AK006679 NM_015737 AK015098 AK007293 NM_010198 AK008979 NM_025460 AK010827 AK010827 AK010827 AK010827 AK015888 AK015888               | 20639<br>14426<br>73818<br>76645<br>14166<br>72383<br>66271<br>76826<br>67887<br>54004<br>70285<br>67171<br>67876                            | Snrpb2 Gaint4 Pkd1l2 Fgf11           | snRNP U2;viral nucleocapsid  Golgi apparatus;extracellular sp  extracellular space  Integral to membrane extracellular space Integral to membrane integral to membrane                 | transcription unknown mlsc unknown unknown growth fector unknown unknown unknown unknown unknown unknown unknown unknown transcription? unknown transcription                      |
|   |   | AK012944 AK006679 NM_015737 AK015098 AK007293 NM_010198 AK008979 NM_025460 AK010827 AK010827 AK010827 AK015888 AK015888 AK015888               | 20639<br>14426<br>73818<br>76645<br>14166<br>72393<br>66271<br>76826<br>67887<br>54004<br>70285<br>67171<br>67876<br>77048                   | S nrpb2 Gaint4 Pkd112 Fgf11 Diap2    | snRNP U2;viral nucleocapsid  Golgi apparatus;extracellular sp  extracellular space integral to membrane extracellular space Integral to membrane                                       | transcription unknown mise unknown unknown growth fector unknown unknown unknown unknown unknown unknown unknown transcription? unknown transcription                              |
|   | 等。<br>第二章                               | AK012944 AK006679 NM_015737 AK015098 AK007293 NM_010198 AK008979 NM_025460 AK010827 AK007787 Y15910 AK010079 AK015888 AK015454 AK011135 X58472 | 20639<br>14426<br>73818<br>76645<br>14166<br>72383<br>66271<br>76826<br>67887<br>54004<br>70285<br>67171<br>67876<br>77048<br>16588          | Snrpb2 Gaint4 Pkd1l2 Fgf11 Diap2 Kin | snRNP U2;viral nucleocapsid  Golgi apparatus;extracellular sp  extracellular space  Integral to membrane extracellular space Integral to membrane  ribosome mitochondrion cytoskeleton | transcription unknown mise unknown unknown unknown growth fector unknown unknown unknown unknown unknown transcription ? unknown transcription transcription mise                  |
|   |   | AK012944 AK006679 NM_015737 AK015098 AK007293 NM_010198 AK008979 NM_025460 AK010827 AK007787 Y15910 AK010079 AK015888 AK01135 X58472 NM_031367 | 20639<br>14426<br>73818<br>76645<br>14166<br>72383<br>66271<br>76826<br>67887<br>54004<br>70285<br>67171<br>67876<br>77048<br>16588<br>15061 | S nrpb2 Gaint4 Pkd112 Fgf11 Diap2    | snRNP U2;viral nucleocapsid  Golgi apparatus;extracellular sp  extracellular space  Integral to membrane extracellular space Integral to membrane integral to membrane                 | transcription unknown mise unknown unknown growth fector unknown unknown unknown unknown unknown unknown transcription ? unknown transcription transcription mise limmune response |
|   |   | AK012944 AK006679 NM_015737 AK015098 AK007293 NM_010198 AK008979 NM_025460 AK010827 AK007787 Y15910 AK010079 AK015888 AK015454 AK011135 X58472 | 20639<br>14426<br>73818<br>76645<br>14166<br>72383<br>66271<br>76826<br>67887<br>54004<br>70285<br>67171<br>67876<br>77048<br>16588          | Snrpb2 Gaint4 Pkd1l2 Fgf11 Diap2 Kin | snRNP U2;viral nucleocapsid  Golgi apparatus;extracellular sp  extracellular space  Integral to membrane extracellular space Integral to membrane  ribosome mitochondrion cytoskeleton | transcription unknown mise unknown unknown unknown growth fector unknown unknown unknown unknown unknown transcription ? unknown transcription transcription mise                  |



Log<sub>2</sub>(ratio)

# Figure 56 A

| ACCESS                  | LOCUS            | GENE             | LOCALIZATION                                       | BIOLOGICAL FUNCTION             |
|-------------------------|------------------|------------------|--|---------------------------------|
| M_008361                | 16176            | ll1b             | extracellular                                      | immune response                 |
| AK020300                | 78240            | Cst11            | extracellular space                                | ecm                             |
| NM_007495               | 11899            | Astn1            | integral to membrane                               | misc                            |
| NM_018821               | 54607            | Socs4            |  | signaling                       |
| AK014760                | 75770            |                  |  | unknown                         |
| Y12713                  | 27282            | Erv4             |  | virus                           |
| AF009011                | 12005            | Axin             | cytoplasmic vesicle                                | signaling                       |
| NM_021493               | 58996            |                  | membrane   | unknown                         |
| NM_011401               | 20527            | S lc2a3          | extracellular space;Integral to                    | transport                       |
| NM_021414               | 74340            | Contint          |  | unknown                         |
| M_023465<br>M_NM_009886 | 67087            | Catnblp1         | cytoplas m;nucleus                                 | signaling                       |
| AK016135                | 75320            | Celsr1           | extracellular space;integral to                    | cell adh (receptor)             |
| NM_020256               | 56805            | Zbtb33           | trans crimina factor complex                       | signaling                       |
| J02995                  | 11350            | Abi1             | transcription factor complex<br>cytoplas minucleus | transcription                   |
| NM_011049               | 18555            | Pctk1            | cytoplasm  | tumor related                   |
| AK006970                | 76719            | - CUKI           | сущизт   | misc                            |
| NM_009423               |                  | Traf4            | nucleus  | unknown<br>apoptos is           |
| AK010747                | 73692            |                  | 7,20,00  | unknown                         |
| AK003581                | 100764           |                  | Integral to membrane                               | unknown                         |
| AK009341                | 69179            |                  |  | unknown                         |
| NM_009179               | 20444            | S iat5           | Golgi apparatus;Integral to memb                   | lipid metabolism                |
| NM_008170               | 14811            | Grin2a           | extracellular space; integral to                   | signaling (receptor)            |
| NM_028104               | 72112            |                  | cytoplasm  | signaling                       |
| BC015273                | 110157           | Rafi             | cytosol;plasma membrane                            | signaling                       |
| AB023957                | 170773           | AB023957         |  | unknown                         |
| U70139                  | 12457            | Ccrn4I           |  | unknown                         |
| III II NM_025771        |                  |                  |  | unknown                         |
| NM_026660               |                  |                  | Integral to membrane                               | Transport                       |
| M_009030                |                  | Rbbp4            | chromatin assembly complex                         | ceil cycle                      |
| NM_008702               |                  | Nik              | nucleus;protein kinase CK2 compl                   | signaling                       |
| NM_009197               |                  | Slc16a2          | integral to plasma membrane                        | transport                       |
| AK014606                | 77043            |                  |  | unknown                         |
| NM_01882                |                  | Nfat5            | cytoplas m; nucleus                                | transcription                   |
| NM_00860                |                  | Miz1             | nucleus;septin ring                                | transcription                   |
| AK017734<br>AK009460    | 75712            | Doil2            | Integral to membrane                               | unknown                         |
| NM_01572                | 66053<br>3 11416 | Ppil2<br>Slc33a1 | nucleus  | translation                     |
| AK017597                | 70549            | Tln2             | endoplasmic reticulum membrane;i                   | transport                       |
| NM_01879                |                  | Abcc6            | integral to plasma membrane                        | ctsk                            |
| AK007552                | 56036            | Ccnt2            | megrat to plastila titelitorarie                   | transport                       |
| NM_02386                |                  | R yr2            | Integral to plasma membrane                        | cell cycle                      |
| NM_02192                |                  | Mapk8lp2         | cytoplasm  | lon channel<br>signaling (MAPK) |
| NM_05409                |                  |                  |  | unknown                         |
| BC 002193               | 110279           | Ber              |  | unknown .                       |
| AK017320                | 67240            |                  |  | unknown                         |
| NM_00927                | 0 20775          | S qle            | extracellular space; integral to                   | lipid metabolism                |
| AK015598                | 74910            |                  |  | unknown                         |
| U20780                  | 217342           |                  |  | protein degradation             |
| M_03356                 |                  | Laf4i            | mitochondrion                                      | tumor related                   |
| AK014549                | 74034            |                  |  | unknown                         |
| BC 004056               | 234463           |                  | integral to membrane                               | unknown                         |
| AF303106                | 110012           |                  | Integral to membrane                               | misc                            |
| BC007132                | 20924            | S upt5h          |  | transcription                   |
| NM_02137                |                  | AB030188         | Integral to membrane                               | unknown                         |
| BC017633                | 70615            | D10Bur2e         |  | unknown                         |
| AK008991                | 70137            | TUO              | _ 6  | unknown                         |
| a NM_01190              |                  | TII2             | extracellular space;membrane                       | protein degradation (secreted)  |
| NM_00929                |                  | Sts              | extracellular space;Integral to                    | misc                            |
| NM_00792                |                  | EI)              | transcription elongation factor                    | transcription                   |
| NM_01070                | 73750            | Whrn             |  | unknown                         |
| NM_01667                |                  | Lgals6           | plasma membrane                                    | cell adh                        |
| 10 10                   | - 55514          | Reck             | extracellular space;membrane                       | protein degradation             |

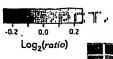


Figure 56 B
BIOLOGICAL FUNCTION

| \$\$ ±      | •           |                        |              |   |                                   | Figure 56 B                |
|-------------|-------------|------------------------|--------------|---|-----------------------------------|----------------------------|
|             |             | ACCESS                 | <b>LOCUS</b> | GENE                                    | LOCALIZATION                      | BIOLOGICAL FUNCTION        |
|             |             | NM_011316              | 20211        | Saa4                                    | extracellular space               | misc                       |
|             |             | NM_052994              | 94214        | Spock2 .                                | extracellular matrix;extracellul  | ecm                        |
|             |             | NM_007480              | 11844        | Arf5                                    | Golgi apparatus; plasma membrane  | transport                  |
|             | Ť.          | AK002767               | 76509        |   |                                   | signaling                  |
| 1           |             | NM_024228              | 68616        |   | extrachromosomal circular DNA;in  | unknown                    |
| =           | 1           | AK017352               | 71421        |   |                                   | unknown                    |
| [           | 1           | NM_018888              | 56046        |   | cytoplas mic vesicle              | unknown                    |
|             | -           | AK006679               |              | · . · · · · · · · · · · · · · · · · · · |                                   | unknown                    |
|             | 3           | AK017809               | 70640        |   |                                   | unknown                    |
|             | - 1         | NM_021307              | 57745        | Zfp112                                  | transcription factor complex      | transcription              |
|             | 3.7         | NM_008885              | 18858        | Pmp22                                   | extracellular space; integral to  | cell cycle                 |
|             |             | NM_019473              | 29845        | Olfr155                                 | Integral to plasma membrane       | signaling (receptor)       |
|             |             | AK006257               | 69371        |   | 3-1                               | unknown                    |
|             |             | NM_009042              | 19692        | Reg1                                    | extracellular space               | growth factor (secreted)   |
|             | 77          | NM_009440              | 22127        | Tsx                                     |                                   | unknown                    |
|             | 72          | NM_015753              | 24136        | Zfhx1b                                  | transcription factor complex      | transcription              |
|             | 23          | NM_026528              |              |   |                                   |                            |
|             |             | AK010745               | 73689        | <del></del>                             |                                   | unknown                    |
|             |             | NM_008040              | 14290        | Fpr-rs3                                 | integral to membrane              | Unknown                    |
| en racia    | -           | AK015014               | 70948        | Wdr20                                   | extrachromosomal circular DNA     | signaling (receptor)       |
| -           |             | AK006897               | 73451        | W 41.20                                 | intracellular                     | misc                       |
| 7.8         |             | AK013012               | 72184        |   | unare iniai                       | transcription ?            |
| 75          | 32          | AK007483               | 67169        |   | Integral to membrane              | unknown                    |
| 7.          | -54         | AK013833               | 57259        | Tob2                                    |                                   | signaling                  |
|             | -           | AK006487               | 75623        | 1002                                    | extracellular                     | signaling                  |
| -           | -           | BC018324               | 70456        |   |                                   | unknown                    |
| -           |             | AK014309               | 75430        |   |                                   | unknown                    |
| -           | -           | AK002386               | 109801       | Glo1                                    |                                   | unknown                    |
| -           |             | AK018963               | 78639        | 3101                                    | <del></del>                       | unknown                    |
| <del></del> |             | NM_020594              |              |   |                                   | unknown                    |
| -           | -           | NM_016888              |              | B3gnt1                                  | membrane;nucleus                  | unknown                    |
|             | -           | AK013995               | 73078        | Dagner                                  | Golgi apparatus;Integral to memb  | translation                |
| <u> </u>    | -           | AK014536               | 66696        |   | mitochandrion                     | misc                       |
|             | <b>i</b> —  | NM_007637              | 12465        | Cct5                                    | plas ma membrane                  | traffic                    |
| -           |             | AK007536               | 66262        | Ing5                                    | chaperonin-containing T-complex   | translation                |
| -           | 1           | NM_009802              |              |   | microtubule                       | tra na cription            |
| -           | ┼           | NM_011651              | 22116        | Car6<br>Stk22s1                         | extracellular space; integral to  | metabolism                 |
| -           | -           | AK014543               | 70804        | 3 UK Z Z S I                            |                                   | signaling?                 |
| asse        | ***         | AK009134               | 75572        | Acyp2                                   |                                   | signaling (receptor)       |
| L-GA        | 1: "        | NM_025273              |              |   | extrachromosomal circular DNA     | meta bolis m               |
| 118         |             | AK012624               | 72621        | Pcbd                                    | cytoplas m; nucleus               | misc                       |
|             | er a        | NM_025568              |              |   | plasma membrane                   | signaling                  |
|             | 22.22       | AK004194               | 68836        | MmiE2                                   |                                   | unknown                    |
|             | h 1.71      |                        |              | Mrpi52                                  |                                   | unknown                    |
| -           | Pan         | NM_013614<br>NM_022321 |              | Odc<br>Parvo                            | mitochondrial inner membrane      | misc                       |
|             |             | NM_012043              |              |   | cytos keleton                     | cell adh                   |
| 4,40        |             | NM_023871              |              | lsir<br>C-1                             | extracellular s pace              | immune response (receptor) |
|             | 1           | NM_025417              |              | Set                                     | chromatin assembly complex        | tumor related              |
|             |             | NM_017478              |              | Cong?                                   | membrane                          | unknown                    |
| 1           |             |                        |              | Copg2                                   | Golgi apparatus;membrane;virai c  | transport                  |
| ļ.,,        |             | NM_007788              |              | Csnk2a1                                 | plasma membrane;protein klnase C  | signaling                  |
| 3-          | ٠.          | AK008793               | 72269        | Cda<br>con OC                           |                                   | misc                       |
| ĺ           |             | NM_019942              |              | sep-06                                  | septin ring                       | ctsk                       |
|             |             | AK018646               | 75761        |   |                                   | apoptosis                  |
|             |             | AK007894               | 75597        |   |                                   | unknown                    |
|             |             | NM_023773              |              |   | chromatin;nucleus                 | transcription              |
| - 94.1      | 1           | AF 217002              | 252972       | Tpcn1                                   | integral to membrane              | trans port                 |
| 7-4-11      | <u> </u>    | NM_017395              |              | R fx5                                   | Intermediate filament             | transcription              |
| ild         | <b>P</b> :: | NM_016843              |              | Sca10                                   |                                   | unknown                    |
|             |             | NM_00765               |              | Cd9                                     | Integral to membrane; plasma memb | Immuna response            |
|             |             | BC002094               | 12913        | Creb3                                   | extrachromosomal circular DNA;nu  | trans cription             |
|             |             | AK008083               | 72041        |   |                                   | unknown                    |
|             | 313         | NM_01056               | 3 16337      | Insr                                    | integral to plasma membrane       | signating (receptor)       |
|             |             | AK018549               | 26413        | Mapk1                                   | cytoplasm;nucleus                 | signaling (receptor)       |
|             | 131         | AK018191               | 67618        | Aasdhppt                                | extrachromosomal circular DNA     | unknown                    |
|             |             |                        |              |   |                                   |                            |

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| BIOLOGICAL FUNCTION | unknown    | unknown  | cell cycle             | signaling                    | ranscription | unknown  | cell adh                         | unknown       | signaling (receptor)            | transport            | unknown  | cell adh - signaling (receptor) | unknown              | metabolism                       | trans port | trans port           | cell cycle       | transport                | transcription                | immune response ?               | Transcription | transcription     | signaling (receptor) | ctsk          | transport       | signaling | cell cycle                   | signaling | protein degradation | unknown                        | transcription                    | unknown              | traffic                         | unknown  | transport                        | translation | immune response     | signaling                          | transcription                   |
|---------------------|------------|----------|------------------------|------------------------------|--------------|----------|----------------------------------|---------------|---------------------------------|----------------------|----------|---------------------------------|----------------------|----------------------------------|------------|----------------------|------------------|--------------------------|------------------------------|---------------------------------|---------------|-------------------|----------------------|---------------|-----------------|-----------|------------------------------|-----------|---------------------|--------------------------------|----------------------------------|----------------------|---------------------------------|----------|----------------------------------|-------------|---------------------|------------------------------------|---------------------------------|
| LOCALIZATION        |            | myosin   | extracellular, nucleus | extracellular space;membrane | nucleus      |          | extracellular space;integrin com | extracellular | extracellular space;integral to | integral to membrane |          | integral to plasma mambrane     | integral to membrane | cytoplas mextracellular space;me | nucleus    | Integral to membrane | chromathrnucleus | synapse;synaptic vesicle | transcription factor complex | extracellular space;integral to |               | chromatiranucleus | integral to membrane | membrane coat |                 |           | phosphorylase kinase complex | cytoplasm |                     | endoplasmic reticulum membrane | aspartate carbamoyltransferase c | integral to membrane | extracellular space;integral to |          | integral to membrane;mitochondri |             | extracellular space | integral to membrane;lys os ome;pl | cytoplasm;nucleus;nbonucleoprot |
| GENE                |            |          | Xrcc4                  | Efna5                        | Neurod6      |          | Gpld1                            |               | Tnfrsf25                        | S1c35a5              | Tmem2    | Cd47                            |                      | Moxd1                            | Pfik1      | Slc39a13             | Jund             | Svn1                     | Fn1                          | Saze                            | 233           | Morfdia           | Pich2                | Dnm           | Vos4a           | Rab14     | Snk                          | Chn1      | Serpinbba           | Ubqln2                         | Sp1                              |                      | Cspg5                           |          | S1c25a19                         |             | Mif                 | Cd63                               | Pcbp3                           |
| rocus               | 73261      | 68339    | 108138                 | 13640                        | 11922        |          | 14756                            | 78906         | 85030                           | 74102                | 83921    | 16423                           | 73608                | 59012                            | 18647      | 68427                | 16478            | 20964                    | 19798                        | 07502                           | 76373         | 56307             | 10207                | 13429         | 116733          | 68365     | 20620                        | 108699    | 20719               | 54609                          | 20683                            | 71904                | 29873                           | 73190    | 67283                            | 70465       | 17319               | 12512                              | 59093                           |
| ACCESS              | J AK006619 | AK002458 | AB055154               | 1 NM 010109                  | 1 NM 009717  | AF039839 | NM 008156                        | AKOZOZE       | NM 033042                       | NM 028756            | AF137031 | AK021021                        | AK007346             | NM 021509                        | NM 011074  | 1 AK003191           | NM 010592        | NM 013680                | MM 010133                    | NM 021286                       | A 1/0120EB    | AND ISUSO         | NW 019700            | 1 21205       | Port D C 019369 | AKON2704  | RE AF411834                  | NM 029716 | NM 009254           | NM 018798                      | NM 013672                        | AK 009450            | NM 013884                       | AK014229 | AK005710                         | RC005755    | K NM 010798         | NM_007653                          | NM 021568                       |
|                     |            |          |                        |                              |              |          | 1                                | Ì.            | 1                               |                      |          |                                 |                      |                                  |            |                      | I                | ľ                        | ,                            |                                 | ĺ             |                   | Ĭ,                   |               |                 |           |                              | 40        |                     | įE:                            |                                  |                      |                                 | 1        |                                  |             |                     |                                    |                                 |

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# Figure 57 B

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|--|------------------------|----------------|----------------|---|--------------------------|
|  | ACCESS                 | <b>LOCUS</b>   | GENE           | LOCALIZATION                                    | BIOLOGICAL FUNCTION      |
| 111197   | NM_008705              | 18103          | Nme2           | microtubule                                     | misc                     |
|  | NM_026829              | 107885         | Mthfs          |   | metabolism               |
|  | AK006407               | 76420          |                |   | unknown                  |
|  | NM_008741              | 18197          | Nsg2           | Golgi apparatus;integral to memb                | transport .              |
| 313 201  | AB049641               | 68537          | Mrpl13         | mitochondrial large ribosomal su                | translation              |
|  | NM_011183              | 19165          | Psen2          | Golgi apparatus; endoplasmic reti               | signaling                |
|  | BC003288               | 28088          | D10Wsu52e      | DNA-directed RNA polymerase II-,                | unknown                  |
|  | BC003432               | 110842         | Etfa           | electron transfer flavoprotein c                | metabolism               |
|  | AK015014               | 70948          | Wdr20          | extrachromosomal circular DNA                   | misc                     |
|  | NM_025963              | 67097          |                | nucleus   | misc                     |
|  | NM_019735              | 56369          | Mmrp19         | extracellular                                   | protein degradation?     |
| 349  | AK003830               | 68523          |                |   | unknown                  |
|  | NM_021489              | 58992          | F12            | extracellular space                             | misc (secreted)          |
|  | NM_026306              | 67674          |                |   | unknown                  |
|  | NM_007793              | 13014          | Cstb           | extracellular                                   | protein degradation      |
|  | AK017451               | 71452          |                |   | unknown                  |
|  | AK005096               | 70364          |                | Integral to membrane                            | transport                |
|  | AK015598               | 74910          |                |   | unknown                  |
|  | AK005139               | 68262          | Agpat4         | Integral to membrane                            | lipid metabolism         |
|  | NM_010941              | 18194          | Nsdhl          | endoplasmic reticulum;integral t                | metabolism               |
|  | AK004679               | 73340          | Nptxr          | chromatin;extracellular space;in                | transcription            |
| CHARLES WAS ASSESSED.                            | BC 016535              | 68556          | Urki1          | cytoplas m                                      | metabolism               |
|  | AK010430               | 69219          | Ddah1          |   | mlsc                     |
| AND PARTY OF THE PER                             | NM_026242<br>NM_011244 | 67568          | Done           |   | Immune response          |
| Charles and Charles                              | NM_011116              | 19411          | Rarg           | extrachromosomal circular DNA;nu                | signaling (receptor)     |
| 1  | NM_008696              | 18807<br>26921 | Pld3<br>Map4k4 | Integral to membrane;membrane fr                | metabolism               |
|  | AK017182               | 75963          | Mahara         |   | signating                |
| 7  | AY 029613              | 70359          | Gtpbp3         | extracellular space;membrane                    | Unknown                  |
| 0  | AK015114               | 73928          | Офоро          | expacendar space;membrane                       | Signaling                |
| 1.7  | NM_016877              | 53621          | C not4         | membrane  | unknown<br>transcription |
|  | AK012848               | 72701          | 011004         | Methbiana                                       | unknown                  |
| -  | AK006305               | 71848          |                |   | unknown                  |
|  | NM_027157              | 69664          |                |   | ctsk                     |
|  | AJ 292072              | 192160         | MIn51          |   | ипклоwn                  |
|  | AK007076               | 73555          |                |   | Immune response          |
|  | AK011557               | 69903          |                | mitochondrial outer membrane                    | unknown                  |
| -  | AK006141               | 75656          |                |   | ипклоwа                  |
|  | NM_007939              | 13842          | E pha8         | extracellular space; integral to                | signaling (receptor)     |
|  | NM_053117              | 93737          | Pard6g         | tght junction                                   | cell cycle               |
|  | AK011396               | 234729         | D8Wsu151e      |   | unknown                  |
|  | BC018363               | 170755         | S gk3          | cytoplasmic vesicle                             | apoptosis                |
| , 40 gr. 0 wro                                   | AK015063               | 75773          |                |   | unknown                  |
|  | NM_007591              | 12317          | Cair           | endoplasmic reticulum lumen;extr                | cell adhesion            |
|  | NM_009106              |                | Rtkn           | intracellular; membrane                         | signaling                |
| <b>  </b>  | AK019915<br>NM_011175  | 78271          | Lome           |   | unknown                  |
| See 2019   | AF062567               | 19141<br>20687 | Lgmn<br>Sp3    | extracellular space; lysosome                   | protein degradation      |
|  | AL078630               | 20007          | Sp3            | transcription factor complex                    | transcription            |
| ·  | AF083812               | 17120          | Mad1I1         |   | unknown                  |
|  | NM_009706              |                | Arhgap5        | membrane  | unknown                  |
|  | NM_015808              |                | Mapk6          |   | ctsk - signaling (GAP)   |
| <del>                                     </del> | NM_007568              |                | Btc            | nucleos ome<br>extracellular space; integral to | signaling<br>cell cycle  |
| <b> </b>   | Y12713                 | 27282          | Erv4           | The Control of Space (Integral to               |                          |
|  | NM_023598              |                | Desrt          | intracellular                                   | virus<br>transcription   |
|  | NM_020257              |                | Dcl1           | Integral to plasma membrana                     | cell adh                 |
|  | NM_021457              |                | Fzd1           | Integral to membrane                            | signaling (receptor)     |
|  | AF131865               | 16561          | Kif1b          | kinesin complex; mitochondrion                  | cts k                    |
|  | AB003303               | 20493          | Slc10a1        | Integral to plasma membrane                     | transport                |
|  | AK008083               | 72041          |                |   | unknown                  |
|  | AK002416               | 68350          |                | Integral to membrane;lateral pla                | transport?               |
|  | NM_007878              |                | Drd4           | Integral to membrane                            | signaling (receptor)     |
|  | AK009454               | 268721         |                |   | unknown                  |
|  |                        |                |                |   | ·····                    |

**Fig 58** 

DIFFERENTIALLY EXPRESSED GENES (SELECTED)

| Access             | Gene .   | Gene Description  | Class                          | Region       |
|--------------------|----------|---|--------------------------------|--------------|
| NM_011025 Oxt      | Öxt      | oxytocin  | signaling (secreted)           | Midbrain     |
| NM_007693          | Chga     | chromogranin A  | signaling (secreted)           | Midbrain     |
| NM_008233          | Hdgfrp2  | hepatoma-derived growth factor, related protein 2                                   | growth factor                  | Midbrain     |
| AF276974           |          | RIKEN cDNA 9230106L14 gene  | unknown                        | Midbrain     |
| NM_011177 Prss18   | Prss18   | protease, serine, 18  | protein degradation            | Midbrain     |
| NM_008350 III1     | 1111     | interleukin 11  | immune response                | Midbrain     |
| NM_008920 Prg2     | Prg2     | proteoglycan 2, bone marrow   | growth factor (secreted)       | Midbrain     |
| NM_008871 Serpine1 | Serpine1 | serine (or cysteine) proteinase inhibitor, clade E, member 1                        | protein degradation            | Midbrain     |
| AF440737           |          | RIKEN cDNA 1700006F03 gene  | misc (secreted)?               | Midbrain     |
| NM_007618          | Serpina6 | NM_007618   Serpina6   serine (or cysteine) proteinase inhibitor, clade A, member 6 | protein degradation            | Midbrain     |
| NM_009136 Scrg1    | Scrg1    | scrapie responsive gene 1   | misc                           | Midbrain     |
| NM_009732 Avp      | Avp      | arginine vasopressin  | growth factor (secreted)       | Hypothalamus |
| BC004020           | Agm      | agrin   | signaling (secreted)           | Hypothalamus |
| NIM_010798         | Mif      | macrophage migration inhibitory factor  | immune response                | Hypothalamus |
| NM_021489          | F12      | coagulation factor XII (Hageman factor)   | misc (secreted)                | Hypothalamus |
| NM_009255 Serpine2 | Serpine2 | serine (or cysteine) proteinase inhibitor, clade E, member 2                        | protein degradation (secreted) | Cortex       |
| NM_007728          | Coch     | coagulation factor C homolog (Limulus polyphemus)                                   | misc                           | Cortex       |
| AF342737           | Bbs2     | Bardet-Biedl syndrome 2 homolog (human)   | misc (secreted) ?              | Cortex       |
| NM_013754 Insl6    | Ins16    | insulin-like 6  | growth factor                  | Cortex       |

Figure 59 (page 143)

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|---------------------|-------------------|--|---------------------------------------|--------------|
| - 11                | Gene              |  | signaling (receptor)                  | Midbrain     |
| AK009282            |                   | RIKEN cDNA 2310010M24 gene   | , , , , , , , , , , , , , , , , , , , | Midhrain     |
| NM_007377           | Aatk              | apoptosis-associated tyrosine kinase   | apopiosis                             | Midbrain     |
| AK017578            | Nrxn1             | neurexin I   | cen adn                               | Midbain      |
| D50872              |                   | platelet-activating factor receptor  | signaling (receptor)                  | Midbrain     |
| NM_009320           | Slc6a6            | solute carrier family 6 (neurotransmitter transporter, taurine), member 6  | transport                             |              |
|                     | £                 | manufactions of consertanily member 9  | cell adh                              | Midbrain     |
| =                   |                   | Italisiiichiniaiic + superianny memos.   | signaling                             | Midbrain     |
| Ξ                   |                   | Stenie alpha inolli dolladii collianii Solomii | transport                             | Midbrain     |
| U70033<br>NM_011990 | Slc8a1<br>Slc7a11 | Solute carrier family 9 (Souther-Carrier, Souther 1) member 11   | transport                             | Midbrain     |
|                     |                   | מחוונה בשינה להיים | signaling (receptor)                  | Midbrain     |
| NM_010509           | Ifnar2            | interferon (alpha and beta) receptor 2   | signaling                             | Midbrain     |
|                     |                   | gamina-aminobutyric acid (GABA-A) iecepiui, suouiii mpiii  | signaling (receptor)                  | Midbrain     |
| NM_019587           |                   | plexin B3  | signaling (receptor) ?                | Midbrain     |
| AF140708            | Tcp10c            | t-complex protein 10c  | signaling (receptor)                  | Midbrain     |
| 9/0800_MN           | Gabrr2            | gamma-aminobutyric acid (GABA-C) receptor, suoum 1110 2  | transport                             | Midbrain     |
| NM_021530           | Slc4a8            | solute carrier family 4 (anion exchanger), memori o  | unknown                               | Midbrain     |
| BC005568            |                   | RIKEN cDINA 2310056K19 gene  | signaling (receptor)                  | Midbrain     |
| NM_009848           | Entpd1            | ectonucleoside triphosphate diphosphonymonase 1  | signaling (receptor)?                 | Midbrain     |
| AK003571            | Ppfia4            | protein tyrosine phosphatase, receptor type, i purypopure (* *****)  |                                       |              |
|                     |                   | protein (liprin), alpina 4   | signaling                             | Midbrain     |
| NM_013596           | Mc5r              | melanocortin 5 receptor  | signaling (receptor)                  | Midbrain     |
| AF282304            | MOR224-12         | olfactory receptor MOK224-12   | signaling (receptor) ?                | Midbrain     |
| NM_019959           | C1qtnf1           | C1q and tumor necrosis ractor related protein a  | transport                             | Midbrain     |
| AB039933            | Dp111             | deleted in polyposis 1-11ke 1  | transport                             | Midbrain     |
| NM_007474           | Aqp8              | aquaporin 8  | immune response                       | Midbrain     |
| NM_009846           | Cd24a             | CD24a antigen  | signaling                             | Midbrain     |
| D83203              | Ptprj             | protein tyrosine phosphatase, receptor type, J   | signaling (receptor)                  | Midbrain     |
| NM_021406           | Trem1             | triggering receptor expressed on myelold cells 1   | transport                             | Midbrain     |
| BC013502            | Tmc6              | transmembrane channel-like gene ramily o   | transport                             | Hypothalamus |
| NM_018772           | Bri3              | brain protein I3   | immune response (receptor)            | Hypothalamus |
| NM_009539           | Zap70             | Zeta-chain (101X) associated process   |                                       |              |

|                     | Hypothalamus                                       | Hypothalamus   | Hypothalamus   | Hypothalamus                                 | Hypothalamus         | Hypothalamus   | Hypothalamus   | Hypothalamus                  | Hypothalamus                                   | Hypothalamus                     | Hypothalamus         | Hypothalamus             | Hypothalamus                             | Hypothalamus  | Hypothalamus                     | Hypothalamus   | Hypothalamus                                  | Hypothalamus            | Cortex               | Cortex   | Cortex                     | Collex      | Cortex                               | Cortex            | Collex                     | Correx                       | Cortex                  | Cortex                             | Cortex                     | Cortex   | Cortex                     | Cortex  | Cortex  | Cortex   | Cortex            | Cortex                       | Cortex                        | Cortex               |                            |
|---------------------|--|--|--|--|----------------------|--|--|-------------------------------|--|----------------------------------|----------------------|--------------------------|--|---|----------------------------------|--|---|-------------------------|----------------------|--|----------------------------|-------------|--------------------------------------|-------------------|----------------------------|------------------------------|-------------------------|------------------------------------|----------------------------|--|----------------------------|---|---|--|-------------------|------------------------------|-------------------------------|----------------------|----------------------------|
|                     | ion channel  | signaling (receptor)                                     | signaling (receptor)                                   | transport                                    | signaling (receptor) | ion channel  | signaling (receptor)   | cell adh                      | signaling (receptor)                           | signaling (receptor)             | ion channel          | ion channel              | ion channel                              | transport   | transport                        | tumor related  | signaling (receptor)                          | signaling (receptor)    | ion couns            | ion cannot   | MIKIOWII                   | transport   | immune response (receptor)           | misc              | signaling                  | signaling (receptor)         | misc                    | transport                          | signaling (receptor)       | transport  | signaling                  | signaling (receptor)                          | signaling (receptor)  | unknown  | ion cannel        | signaling (receptor)         | unknown                       | signaling (receptor) |                            |
| Fraux Sq (pag 2013) | calcium channel, voltage-dependent, beta 3 subunit | gamma-aminobutyric acid (GABA-A) receptor, subunit delta | guanine nucleotide binding protein, alpha inhibiting 2 | retinal degeneration B2 homolog (Drosophila) | galanin receptor 2   | hyperpolarization-activated, cyclic nucleotide-gated K+2 | protein tyrosine phosphatase, receptor type Z, polypeptide 1 | poliovirus receptor-related 2 | neurotrophic tyrosine kinase, receptor, type 2 | glucagon-like peptide 1 receptor | chloride channel 4-2 | chloride channel K1-like | morasesium channel suhfamily K. member 7 | A D Thorwlation factor-like 6 interacting protein 5 | Mid_1 related chloride channel 1 | International parent parent parent percentage associated | palate, lung, and masar chimeran car can care | melanocortin 4 receptor | opioid receptor-like | sodium channel, voltage-gated, type I, alpha polypeptide | RIKEN cDNA 2810031L11 gene | copine VIII | interleukin 15 receptor, alpha chain | secretogranin III | plexin domain containing 2 | unc-5 homolog C (C. elegans) | gene trap ROSA b-geo 22 | solute carrier family 38, member 3 | RIKEN cDNA 2310010M24 gene | FXYD domain-containing ion transport regulator 5 | neumonentide V recentor VI | alternote recentor innotronic AMPA4 (alpha 4) | ginalitate teceptor, totologically tector family receptor alpha 2 | gna cen mie denve incure recent de la central de la centra | synaprogynn 5<br> | prizely Anna 1100003K14 gene | NINTEN COUNTY 2610024G14 gene | onisid recentor-like | יייי ייייי פאלאסטן דונסנלס |
|                     | Carab3   | Gabrd  | Gnai2  | Rdgb2  | Galr2                | Hcn2   | Ptorz1   | Pvrl2                         | NEKZ   | Glote                            | Clend-2              | Clear 1                  | Vmb7                                     | Adding  | Mala                             | Merc   | Fiunc   | Mc4r                    | Obrl                 | Scn1a  |                            | Cone8       | 1115ra                               | Scg3              | Plxdc2                     | Unc5c                        | Gtreeo22                | C153833                            |                            | FrudS  | No.1                       | Ilypy II                                      | chat<br>Chat  | 7 CH27   | Syngra            |                              |                               | F. C                 | 10<br>11<br>11             |
|                     | NW 007581  | NM 008072  | NM 008138  | NM 011256                                    | NM 010254            | NM 008226  | BC002298   | 068800 MN                     | X17647   | NM 021332                        | NIM 011334           | 107010 MM                | NW 010600                                | MM_003002   | MM_042994                        | DC003247   | NM_011126                                     | AF201662                | NM_011012            | NM_018733  | AK012847                   | AK004559    | NM_008358                            | NM_009130         | NM 026162                  | NM 009472                    | AF303106                | NIM 023805                         | A K 000282                 | 192800 MIN                                       | 1414_006101                | NM_010934                                     | 169610_MN   | C11800_MN  | NM_011522         | 60010_MN                     | AKUU44/2                      | MM_019650            | INIM_UITUITZ               |

Figure 59 (page 3 13)

|  | uansport<br>signaling (receptor)                             | signaling (receptor) Cortex signaling (receptor) Cortex |  | apoptosis                            | signaling (receptor)                      | i signal transducer)   cell adh - signaling (receptor)   Cortex          |
|--|--|---|--|--------------------------------------|---|--|
| Down syndrome critical region homolog 2 (human) RIKEN cDNA C630002M10 gene | solute carrier family 8 (sodium-calcium exchanger), member 1 | RIKEN cDNA 1700017111 gene                              | v-erb-b2 erythroblastic leukemia viral oficogene nomotog 3 (aviau) | anontosis-associated tyrosine kinase | paired basic amino acid cleaving system 4 | CD47 antigen (Rh-related antigen, integrin-associated signal transducer) |
| Dscr2  | Slc8a1   | t 1010  | Erbb3  | 1 rpc1                               | Pace 4                                    | C447   |
| VIM_019537   Dscr2<br>VIM_019631   | U70033   | 13276   |  |                                      |   |  |

Figure 60

# DIFFERENTIALLY EXPRESSED GENES (SELECTED)

| Access    | Gene   | Description                                  | Class                          | Region       |
|-----------|--------|--|--------------------------------|--------------|
|           | Cstb   | cystatin B                                   | protein degradation            | Midbrain     |
| 1 —       | F12    | coagulation factor XII (Hageman factor)      | misc (secreted)                | Midbrain '   |
| NM_019735 | Mmrp19 | monocyte macrophage 19                       | protein degradation?           | Midbrain     |
| NM_010798 | Mif    | macrophage migration inhibitory factor       | immune response                | Midbrain     |
| NM_009042 | Reg1   | regenerating islet-derived 1                 | growth factor (secreted)       | Hypothalamus |
| NM_011904 | T112   | tolloid-like 2                               | protein degradation (secreted) | Hypothalamus |
| AK020300  | Cst11  | cystatin 11                                  | ecm                            | Hypothalamus |
| NM_008361 | Il1b   | interleukin 1 beta                           | immune response                | Hypothalamus |
| NM_010198 | Fgf11  | fibroblast growth factor 11                  | growth factor                  | Cortex       |
| NM_011336 | Ccl27  | chemokine (C-C motif) ligand 27              | immune response (secreted)     | Cortex       |
| NM_008382 | Inhbe  | inhibin beta E                               | growth factor (secreted)       | Cortex       |
| NM_009136 | Scrg1  | scrapie responsive gene 1                    | misc                           | Cortex       |
| AK011747  | Mgm1   | mahogunin, ring finger 1                     | apoptosis                      | Cortex       |
| NM_008344 | Igfbp6 | insulin-like growth factor binding protein 6 | growth factor                  | Cortex       |
| AK004074  | 1125   | interleukin 25                               | growth factor                  | Cortex       |

1

# Fig 61 (page 10f2) DRUG TARGETING CANDIDATES

|             |          | のでは、<br>では、<br>では、<br>では、<br>では、<br>では、<br>では、<br>では、                      | A Class of the Control of the Contro | Kegions      |
|-------------|----------|--|--|--------------|
| Access      |          |  |  | Midbrain     |
| NM_007878   | Drd4     | dopamine receptor 4  | ransnort ?   | Midbrain     |
| AK002416    |          | RIKEN cDNA 0610009K11 gene   | trought  | Midhrain     |
| AB003303    | Slc10a1  | solute carrier family 10 (sodium-bile acid cotransporter family), member 1 | 1 design   |              |
| 137100 3114 | 7.041    | timed homolog 1 (Drosophils)   | signaling (receptor)   | Midbrain     |
| NM_021457   | FZd1     | III Zzied iloniolog 1 (Preseprima)   | cell adh   | Midbrain     |
| NM_020257   |          | C-type tecum 1   | cell cycle   | Midbrain     |
| NM_007568   | , pg     | Defacellulli, epideillad grown sacot same?                                 | signaling (receptor)   | Midbrain     |
| NM_007939   | Epha8    | Eph receptor As  | unknown  | Midbrain     |
| AK006305    |          | RIKEN cDNA 1700024304 gene   | signaling (receptor)   | Midbrain     |
| NM_011244   | Rarg     | retinoic acid receptor, gamma  | unknown  | Midbrain     |
| AK009450    |          | RIKEN cDNA 2310021M12 gene   | signaling (receptor)   | Midbrain     |
| NM_008958   | Ptch2    | patched homolog 2  | immine response?   | Midbrain     |
| NM_021286   | Sez6     | seizure related gene 6   | cell adh - signaling (receptor) Midbrain   | Midbrain     |
| AK021021    | Cd47     | CD47 antigen (Rh-related antigen, integrin-associated signal transducer)   |  |              |
|             |          | A workwood 20 III o  | transport  | Midbrain     |
| NM_028756   | Slc35a5  | solute carrier tamily 33, member A3  | signaling (receptor)   | Midbrain     |
| NM_033042   | Tnfrsf25 | tumor necrosis factor receptor supertaining, inclined 23                   | cell adh   | Midbrain     |
| NM_008156   | Gpld1    | glycosylphosphatidylinositol specific pnospiionipase D.                    | signaling (receptor)   | Hypothalamus |
| AK018549    | Mapk1    | mitogen activated protein kinase i   | signaling (receptor)   | Hypothalamus |
| NM_010568   | Insr     | insulin receptor   | Immune response  | Hypothalamus |
| NM_007657   | 6P)      | CD9 antigen  | transport  | Hypothalamus |
| AF217002    | Tpcn1    | two pore channel 1   | immune response (receptor)   | Hypothalamus |
| NM_012043   | Ish      | immunoglobulin superfamily containing leucine-item                         | signaling (receptor)   | Hypothalamus |
| AK014543    |          | RIKEN cDNA 4631434019 gene   | signaling (receptor)   | Hypothalamus |
| NM_008040   | Fpr-rs3  | formyl peptide receptor, related sequence 3                                | signaling (receptor)   | Hypothalamus |
| NM_019473   | Olfr155  | olfactory receptor 155   | cell adh   | Hypothalamus |
| NM_010707   | Lgals6   | lectin, galactose binding, soluble o                                       | unknown  | Hypothalamus |
| NM_021373   | AB030188 | hypothetical protein, clone 1-33   | ion channel  | Hypothalamus |
| NM_023868   | Ryr2     | ryanodine receptor 2, cardiac  | transport  | Hypothalamus |
| NM_018795   | Abcc6    | ATP-binding cassette, sub-family C (CF1K-ivikr), memory of                 | •  |              |

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|           |          |   |                            | Hymothalamus |
|-----------|----------|---|----------------------------|--------------|
| AK017734  |          | RIKEN cDNA 5730496E24 gene  | unknown                    | Hypothalamus |
| NM_009197 | Slc16a2  | boxylic acid transporters), member 2  | u di isport                |              |
|           |          |   | Transport                  | Hypothalamus |
| NM_026660 |          |   | signaling (receptor)       | Hypothalamus |
| NM_008170 | Grin2a   | MDAZA (epsilon 1)   | unknown                    | Hypothalamus |
| AK003581  |          |   | cell adh (receptor)        | Hypothalamus |
| NM_009886 | Celsr1   | FLAG seven-pass G-type receptor 1   | misc                       | Hypothalamus |
| NM_007495 | Asm1     |   | transport                  | Cortex       |
| AK005887  | Slc38a4  |   | signaling (receptor)       | Cortex       |
| NM_013661 | Sema5b   | sema domain, seven thrombospondin repeats (type 1 and type 1-like), transmembrane |                            |              |
|           |          | 1   | transport                  | Cortex       |
| NM_007474 | Aqp8     | aquaporin 8   | immune response (receptor) | Cortex       |
| NM_013483 | Btn1a1   | butyrophilin, subfamily 1, member A1  | transport                  | Cortex       |
| NM_019799 | Rhcg     | Rhesus blood group-associated C glycopiotem                                       | unknown                    | Cortex       |
| NM_021550 |          | RIKEN cDNA 1500002111 gene  | transport                  | Cortex       |
| AK005182  | Slc35f2  | solute carrier family 35, member F2   | immune response (receptor) | Cortex       |
| NM_008338 | Ifngr2   | interferon gamma receptor 2   | tumor related (receptor)   | Cortex       |
| AK004688  |          | RIKEN cDNA 1200010C09 gene  | signaling (receptor)       | Cortex       |
| NM_011906 | Tpra40   | transmembrane domain protein regulated in authorytes                              | transport                  | Cortex       |
| AK014872  | Slco6d1  | solute carrier organic anion transporter rainuly, included our                    | signaling (receptor)       | Cortex       |
| NM_007761 | Crop     | calcitonin gene-related peptide-receptor component process                        | transport                  | Cortex       |
| NM_019415 | Slc12a3  | solute carrier family 12, member 3  | ion channel                | Cortex       |
| NM_011930 | Clcn7    | chloride channel 7  | Signaling (receptor)       | Cortex       |
| BC007481  | Plxnb2   | plexin B2 .   | immune response            | Cortex       |
| NM_007934 | Enpep    | glutamyl aminopeptidase   | signaling (receptor)       | Cortex       |
| NM_008165 | Gria1    | glutamate receptor, ionofropic, AMFA1 (alpha 1)                                   | transport                  | Cortex       |
| AK003423  | Slc16a14 | solute carrier family 16 (monocarboxylic acid transporters), member 14            |                            |              |
|           |          |   | transport                  | Cortex       |
| AF156547  | Atp11c   | Atpase, class VI, type 11C  | unknown                    | Cortex       |
| NM_011522 | Syngr3   | synaptogyrin 3  |                            |              |